

***United States Court of Appeals
for the Second Circuit***



TRANSCRIPT

APPEAL

75-6068

PETITION

75-4164

United States Court of Appeals
FOR THE SECOND CIRCUIT

SUN ENTERPRISES, LTD., SOUTHERN NEW YORK FISH AND GAME
ASSOCIATION, INC., LYMAN E. KIPP, RICHARD E. HOMAN, NO
BOTTOM MARSH and BROWN BROOK,

Plaintiffs-Appellants,

—against—

RUSSELL E. TRAIN, *et al.*

[“Federal Defendants”],

HERITAGE HILLS OF WESTCHESTER, *et al.*
[“Private Defendants”],

Intervenors.

SUN ENTERPRISES, LTD., SOUTHERN NEW YORK FISH AND GAME
ASSOCIATION, INC., LYMAN E. KIPP, RICHARD E. HOMAN, NO
BOTTOM MARSH and BROWN BROOK,

Petitioners,

—against—

ADMINISTRATOR OF THE U. S. ENVIRONMENTAL
PROTECTION AGENCY, RUSSELL E. TRAIN,

Respondent, and

HERITAGE HILLS OF WESTCHESTER, *et al.*

Intervenors.

Appeal from the U. S. District Court for the Southern
District of New York

Petition to Review Order of U. S. Environmental
Protection Agency

TRANSCRIPT OF DEC Hearing, Volume 3 of 9

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STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter

of

the Application of HENRY PAPARAZZO and CURTIS McGANN (HERITAGE HILLS) for the acquisition of a source of water supply by the development of wells to ultimately supply 1.2 million gallons per day and the construction of a water supply and distribution system to provide service to a planned residential community consisting of approximately 3,000 living units known as Heritage Hills of Westchester County, for the construction of a dam approximately 20 feet high to create a pond having an area of approximately 1.6 acres on an unnamed tributary, known locally as Brown Brook, of the New Croton (Muscoot) Reservoir which is designated H-31-P-44-18 and which has been classified C(T), for the construction of a sewage effluent discharge structure, and for relocation of approximately 650 feet of the so-called Brown Brook to build a sewage treatment facility.

Water Supply Application No. 6284

CONTINUED TRANSCRIPT OF PROCEEDINGS

held in the above-entitled matter at a hearing held by the New York State Department of Environmental Conservation at the Town Hall, Town of Somers, Westchester County, New York, on Wednesday, September 19th, 1973, commencing at 10:00 o'clock A.M.

PRESIDING: WILLIAM J. DICKERSON, JR.,
Hearing Officer.

APPEARANCES: (As heretofore noted.)

PROCEEDINGS

MR. DICKERSON: O.K. Ladies and gentlemen, I think we can resume this morning.

As you know, this is a continuation of a hearing before the Department of Environmental Conservation in the application of Henry Paparazzo and Curtis McGann for the various projects they have applied for, particularly the water supply system, the water supply source and water supply system, the stream protection permits involving the construction of the sewage outfall or sewage effluent discharge structure, the relocation of the stream known as Brown Brook and the construction of a dam.

I don't think there's any question of all the issues so far. With that, we will proceed. When we adjourned yesterday, Mr. McPhee was undergoing cross-examination by Mr. Vazzana and we'll continue at that point.

WALTER MCPHEE,
called as a witness for and in behalf of the applicant, having been previously duly sworn, resumed and testified further as follows:

CROSS-EXAMINATION BY MR. VAZZANA: (Continued)

Q. Mr. McPhee, that aquifer we were talking about, Well No. 3, where is that located on this map?

MR. VAZZANA: And by the way, what exhibit is this?

MR. DICKERSON: That is Exhibit No. 23.

THE WITNESS: Exhibit No. 23.

MR. VAZZANA: On Exhibit No. 23.

A. I can -- pretty hard to describe. I can mark it for you.

Q. Can you just make a notation?

A. (Witness marks exhibit.)

MR. DICKERSON: The witness has indicated on Exhibit No. 23 with a blue marker pen the area or approximate area of the 100 acres plus or minus that indicates the well site.

THE WITNESS: Right.

MR. DICKERSON: It's an approximate location of the area outlined in green on Exhibit 4.

Q. The wells?

A. Approximate location, yes.

MR. BLASI: Is that Exhibit 4?

THE WITNESS: No, this is 23.

MR. DICKERSON: No, it's an approximate location of the area that is shown -- the well that is shown on Exhibit 4.

Q. And can you mark also Wells No. 1 and 2?

A. Let's see, the wells are just about one here and the other two are up there (indicating). Now, we'll just make sure with the way the numbers run. "A" not numbered on there.

MR. DICKERSON: For sake of common reference, would you either -- do you have any records that would indicate which wells are numbered so we can correlate the locations with the report?

THE WITNESS: See if I have them.

MR. BLASI: Why don't you take the original waste water report right there.

THE WITNESS: No. 1 is the easterly well, west side of swamp area; No. 2 and No. 3 is at the gravel pits to --

MR. DICKERSON: Would you indicate on Exhibit 23 and Exhibit 4 with the disappearing black marker pen the numbers. We'll indicate the well numbers with a black marker pen on Exhibit 23 and Exhibit 4.

(The witness marked the exhibits.)

BY MR. VAZZANA:

Q. Am I correct, Mr. McPhee -- you've marked those?

A. Yes.

Q. Am I correct that you will be drawing from Well No. 3?

A. No. We will be drawing from the aquifer in the sense that Well No. 3, Well No. 1 and Well No. 2 are test wells put in at the time at what we thought was the best location for these wells. Further investigation --

MR. DICKERSON: Let's go off the record for a second.

(Discussion off the record.)

MR. DICKERSON: We'll go back on the record. Thank you.

Q. Do you have the question, Mr. McPhee?

A. Yes, the -- your question was whether we will be withdrawing water from Well No. 3. Possibly, but as I want to qualify that answer would be that Wells 1, 2 and 3 were test wells. They were not developed wells. We will do additional investigation to determine the best location for highest

producing wells so that we can limit the number of wells to possibly two wells instead of three wells. This will require additional probings to determine where the thickest portion of the aquifer is so that we can get the deepest well and the lowest setting on our stream as possible.

Q. So wells 1, 2 and 3 may not be the particular wells you will be using, is that correct?

A. That's right, that's right.

Q. In other words, you'll be making further tests to determine just exactly where you're going to go from that point on, is that right?

A. That is correct.

Q. Now, from your tests -- and I'm talking about tests on Well No. 3 because mainly that's where you've concentrated your efforts at the moment, is that right?

A. In that area, yes, in that aquifer.

Q. Now, tell me what effect -- by the way, how much will you be drawing or how much will be drawn if you decide to -- from 3?

A. The estimated pump capacities to be installed would be approximately 500 and some gallons per

minute capacity, combined capacity of the two pumps. Let me just check that. Approximately 550 gallons per minute.

Q. Now, isn't it a fact, Mr. McPhee, that if you draw that amount of water from that well, there is the probability that there will be a diminution of water to the residents of the area?

A. That possibility always exists.

Q. And this is true with the other two wells that we're speaking about, isn't that so?

A. Well, we're talking, in this case when I said that possibility exists, in a sense we are tapping an aquifer. It is a common aquifer. Therefore, the aquifer will adjust itself to the withdrawal. If we extract too much water beyond the capacity of the aquifer to recharge, then there would be a reduction in water for some of the other wells. This we are taking into account.

Q. And it will be a reduction of water to those residents in the community, is that right?

A. Those in the community qualify to a point if they had shallow wells. If they have deep rock wells, no.

Q. Do you know whether they have shallow wells or deep wells?

A. To my knowledge, there are no shallow wells in that area but I cannot state that as a fact.

Q. As a fact, I mean it's just purely your supposition at the moment?

A. Yes, yes.

Q. Now, have you taken into consideration also the supply of water not only for the residents but also to the other facilities such as fire -- for fire protection?

A. Yes.

Q. You have taken that into consideration?

A. I have taken that into consideration. The sizing --

Q. I'm sorry, continue.

A. The sizing of the distribution facility and the pumping capacity where required for fire protection is designed to meet that.

Q. And am I assuming that your answer to that source also, that there's a diminution to that source also or to that source?

A. I don't follow your question in that.

MR. DICKERSON: I think there's a little confusion. Your previous question was referring to other sources referring to fire protection.

MR. VAZZANA: No, mine was to residential.

MR. DICKERSON: But other than the applicant system.

MR. VAZZANA: That is correct.

A. As far as fire protection, it comes from this system. The source of water for fire protection will be from the wells since your hydrants are on your potable water system. The main protection for fire would be the storage in the one million gallon tank as well as the capacity of the well meeting your norms as far as the -- the Board of Fire Underwriters do not get into this level as far as ratings and specifications. The insurance companies have their own agencies, a central agency for doing this, and this will be approved by the central agency of the insurance. I can't recall the name of it but it's an office downtown. It's William Street, and it passes upon this and

represents all insurance companies and we will have to submit our plans and specifications to them for approval to see that it concurs with their standards as far as fire protection goes.

Q. There is that probability, is that right, that there will be diminution to that, the fire protection?

A. Yes, I have to answer the question yes. Fire protection, the duration of a fire is normally limited and the duration of a fire comes from the fire -- water used for fire fighting comes from storage. Therefore, you're going to have to replace that when it's withdrawn from storage by additional pumping out of the aquifer. It is small usually, in the overall annual picture of water withdrawal from the aquifer.

Q. Now, there are other -- there are commercial developments in the area, are there not?

A. There are lands set aside for possible commercial development and we have indicated that in designing our system we will provide for a flow of 44,000 gallons per day annual average demand.

Q. To these other developers?

A. To this possible commercial area, and the other development would be the development to the north which we have estimated 100,000 gallons per capita I believe called Greenbriar Estates. That will be the other project. No, I'm sorry, that's sewage. Water is -- water, I'm sorry, I'm misstaken on that. That is on the sewage end, not on water. We do not supply Greenbriar. Greenbriar will develop its own supply.

Q. Its own supply of water?

A. Of water.

Q. Coming from the same aquifer?

A. No, I have no idea where their water will be.

Q. In other words, you don't know whether it will be coming from that aquifer?

A. Well, it can't come from that aquifer unless we supply it and since we're not going to supply it, it cannot come from that aquifer.

MR. VAZZANA: I will defer now to Mr. Manna from our Department or Mr. Danskin.

MR. DICKERSON: Mr. George Danskin.

MR. BLASI: He wants to ask questions?

MR. DICKERSON: Pardon.

MR. BLASI: I was just wondering if he is calling him as a witness.

MR. DICKERSON: No, I believe he wants some of the persons from the Regional Offices whose appearances were noted to ask certain technical questions.

Mr. George Danskin, Regional Supervisor of Environmental Analysis for Region III.

BY MR. DANSKIN:

Q. Mr. McPhee, I realize you have stated many times or answered the question that the water being developed pursuant to this application for a water supply would not be served to the subdivision known as Greenbriar?

A. Except for the last slip, yes, which I corrected myself.

Q. Yes. I think that -- not to embarrass you or not to be a stickler, but can we have the record, the page 1 of the waste water facilities report amended to show that --

MR. DICKERSON: Which copy, Exhibit

23?

MR. DANSKIN: Exhibit 23.

MR. DICKERSON: The July 23rd, 1973,

Revised after, 28 August edition.

MR. DANSKIN: Yes, lines -- the first sentence of paragraph 2, could that be -- would that --

THE WITNESS: Actually, I can see what you're driving at. The intent in writing it was that provision would be made since this was a waste water facility report to serve them as far as waste waters were concerned, not as far as water supply.

Q. So it would be corrected to delete the word "water."

MR. BLASI: We will so stipulate.

A. I think that -- which copy do you have?

MR. DANSKIN: Your July of '72.

THE WITNESS: Oh, that is the final copy. I thought that was taken care of in one of the corrections.

MR. DANSKIN: Yes, where it says "Provisions are being made to serve an additional 300 acres with water --"

THE WITNESS: "Water and sewage," delete the "water," that is correct.

MR. BLASI: Stipulate to that.

THE WITNESS: I thought that had been picked up and if somebody had asked me without picking up the page, to swear that it had been corrected, I might have said so.

MR. DICKERSON: In other words, on page 1 of Exhibit 23, paragraph 2, second line, the words "water and" should be stricken.

MR. DeGRACE: Excuse me, not Exhibit 23.

MR. BLASI: No, Exhibit 21.

MR. DICKERSON: Exhibit 21, I'm sorry. That's page 1 of Exhibit 21, second paragraph, second line, the last two words in the line, "water and."

THE WITNESS: You're correct. Peter Blasi had picked that up two months ago and I would have sworn that it was corrected.

MR. DANSKIN: Mr. McPhee --

THE WITNESS: So will you.

BY MR. DANSKIN:

Q. Mr. McPhee, in listening to your testimony, I understand that you are involved extensively, if not

entirely, in the design of the sewage treatment facilities?

A. Yes, my firm.

Q. Is it appropriate to say that this is in the treatment aspects of these facilities or all aspects of the facilities including the siting of the facility, the exterior design and construction of the facility?

A. I would say the overall picture.

MR. DANSKIN: May I ask, Mr. Hearing Officer, that the application submitted for relocation of the stream and the discharge of the treated sewage effluent be marked for identification at this time.

MR. DICKERSON: For identification, Exhibit No. 24 is a copy of New York State Department of Environmental Conservation form DWR-35(9/70) application for permit, disturbance of streambed or excavation in or fill of navigable waters." This application has been designated as No. 360-24-0051 (SP-85).

MR. FLORENCE: What's the date of that application?

MR. DICKERSON: It was signed July

12th, 1973, and accompanying that form are three sheets which will be marked for identification as follows: Exhibit No. 25 for identification is a map or plan entitled "Stream Relocation, Heritage Hills of Westchester," dated 7/2/73 showing the seal of Leonard J. Bibbo, Licensed Professional Engineer. For identification, Exhibit No. 26 is a map and plan designated "Condominium No. 1, Route 202 and Warren Street outfall sewer," also showing the seal of Leonard J. Bibbo, Professional Engineer. The date on the plan indicates a date of July 11th, 1973. Let's go off the record for a second.

(Discussion off the record.)

MR. DICKERSON: Let's go back on the record.

The third sheet more properly belongs in the other folder concerning the dam application. To continue at least to put handles on these various papers, I will continue marking for identification Exhibit No. 27, which is a copy of New York State Department of Environmental Conservation form DWR-36 (5/70) Application for Permit for Construction, Reconstruction or Repair of a

Dam or Other Impoundment Structure." This will be marked as Exhibit -- or marked for identification as Exhibit No. 27. This application is signed July 12th, 1973.

Exhibit No. 28 for identification will consist of two sheets, sheet number one bearing the caption "Access Drive from Warren Street and Proposed Pond," bearing the seal of Leonard J. Bibbo, Professional Engineer, dated May 1st, 1973, revised July 9th, 1973, and it indicates that it is sheet 1 of 2. For common reference, I'll designate this as Exhibit No. 28-A and Exhibit 28-B will be sheet 2 of 2 and entitled "Condominium No. 1, Dam at Warren Street Access Drive," also bearing the seal of Leonard J. Bibbo, Professional Engineer, and this is dated July 13th. I believe it's a misprint, it says July 13, 31. The dam application has been officially designated as an application number 360-24-0051(ST-86). For common reference, I think we can refer to the stream protection application and the dam application for clarity.

(The documents described above were marked for identification as Exhibits

numbered 24, 25, 26, 27, 28-A and 28-B respectively, this date.)

MR. DICKERSON: Do you gentlemen want to take a two- or three-minute break to look at these plans?

MR. FLORENCE: No, I don't want to take the time if I can help it.

MR. DICKERSON: Well, let's go off the record so that at least everybody can relax for a minute.

(Discussion off the record.)

MR. DICKERSON: O.K., let's go back on the record. We have marked for identification Exhibits 24 through 28-A and -B, referring to the application for stream location and discharge structure and the application for the dam. Any questions? O.K. Let's --

MR. DANSKIN: If it's appropriate, would it be appropriate to offer these into evidence at this time?

MR. DICKERSON: Or request the applicant to.

MR. BLASI: I have no objection.

MR. DICKERSON: Any objection as to
filed documents?

MR. BLASI: They're part of the
application.

MR. DICKERSON: Mr. Bibbo will be
testifying in detail about this?

MR. BLASI: Yes, he will. He's
here.

MR. DICKERSON: O.K. we'll use
these for reference at this time, Exhibits 24, 25,
26, 27 and 28-A and -B are received into evidence..

(Exhibits numbered 24 through 28-A
and -B inclusive, previously marked for identifi-
cation were received in evidence, this date.)

MR. FLORENCE: I would simply ask
you, Mr. Dickerson, at such time as Mr. Bibbo takes
the stand, to simply ask if these were what he pre-
pared so we will know that. I think that's the way
to qualify them.

MR. BLASI: That will be done.
That will be done.

BY MR. DANSKIN:

Q. Mr. McPhee, in light of the fact that these

applications and plans were prepared by Mr. Bibbo, they do in part relate to the sewage treatment facilities. Were you basically aware of these plans?

A. Yes, I am.

Q. And their content?

A. Yes, two of them specifically, one on the dam, the relocation on the outlet structure.

Q. Referring to the one that applies for a permit to relocate the stream around the sewage treatment facility, in your design of the facility have you explored or considered other situations of the plant itself or locations of the plant itself on the property of Heritage Hills or H & H Land Company that would obviate or make unnecessary the relocation of the stream?

A. It was studied and actually the site that was selected was really the only site within the land allocated where it could be put. There are limitations by the state in the sense of a 300-foot proximity to dwellings and the Zoning Board requires a 100-foot buffer zone along Warren Street and so with these limitations, you are boxed in on the

site on three sides and if you continue to move to the south, you are still boxed in so that you could not really avoid building in the streambed unless you went down practically onto Route 202 which, there again, you had a buffer zone that you had to be concerned with and that pushed you right back in the streambed so within the land available, the site selected was really the only site and, therefore, the stream had to be relocated if the plant was to be built as planned.

Q. Tell me this: Those requirements that you referred to, the town and the requirements of the state, distances, separation, is there any provision for a waiver or of a variance from those distances, you know, issued by the responsible agencies?

A. I don't know. I can't answer that, whether there are or whether the state regulations or the zoning regulations -- I wouldn't know.

Q. In any event, such a waiver so that the stream would -- to situate the plant in such a location where the stream would not have to be relocated has not been sought?

A. No.

MR. FLORENCE: Can I get a re-reading of the question? I'm not so sure I understood even the question and, obviously, I didn't understand the answer.

MR. DICKERSON: Pauline, would you?

(The record was read by the reporter.)

BY MR. DANSKIN:

Q. Mr. McPhee -- Mr. McPhee, was the water facility report July '73 -- I'm sorry, I don't have the identification number -- Plate V?

A. Right.

MR. DICKERSON: You mean referring to --

MR. DANSKIN: Exhibit 21, Plate V.

MR. BLASI: Figure V or Plate V?

THE WITNESS: Plate V.

Q. Plate V or Figure V, I'm sorry.

A. Figure V, yes.

Q. Depicts a plan view of the sewage treatment facility and some portions of the stream, in particular what appears to be a stream channel running in a basically easterly -- east to west direction immediately -- immediately south of a crosshatched area

indicated "Future." That's -- that appears to be inconsistent with the plans -- the plans submitted, rather perhaps inappropriately, but I suggest that this might be a conceptual -- a conceptual view of what was intended as opposed to what was actually or what is actually intended.

A. At the time this drawing was made, thought was given to actually routing the stream through the proposed pond east of Warren Street and then out of that pond back through its normal course back to a point, but because this became a major relocation of the stream, it was dropped to a limited relocation of the stream just to avoid construction of the treatment plant.

Q. Mr. McPhee, in choosing -- in choosing the site for the sewage treatment facility, has consideration been given to the possibility or probability of those lands being flooded?

A. Yes, the treatment plant elevation of all facilities are above any possible flooding because they are all above the level of the road on 202 and Warren Street. There was a depth of fine valley at that point which becomes your control section for

any water flow, flood flow, to pass down into the lower lands.

Q. In the event then of a flood of the hundred-year frequency occurring in this particular situation, none of the sanitary -- none of the facilities related to or integral to the sewage treatment facility would be inundated?

A. My calculations, no.

Q. One other question, sir: It is presently proposed to discharge the treated effluent to a pond referred to as the Fire Pond?

A. Right.

Q. In your estimation, your professional estimation, is there any possibility of algal blooms or any other untoward results that would affect the use of that water in the pond for fire fighting purposes, fire fighting training or any other specific purposes?

A. Based on the state's position as far as the removal of phosphorus to the levels of a half a part per million, I would say no, that there is not that possibility and since the Fire Pond and the stream-- profile of the stream from the Heritage property to

a point through the Kipp property to Route 100 indicates phosphorus levels frequently higher than this, therefore, I would say no.

Q. I'm not sure this is an appropriate question because it's a hypothetical situation. If the -- if the Fire Pond and the -- and some section of stream developed were on the property of H & H or Heritage Hills, would you recommend discharge to a point below the Fire Pond rather than to a point ~~above~~ the Fire Pond from the standpoint of water quality and possible effects on the pond?

A. No, I would actually recommend that it go through the Fire Pond as additional stabilization for any coliforms that might still be present after -- after disinfection. Fire Pond is sufficiently deep that you would get a reasonable stabilization. The reason we did not go through the pond and avoided it, the little pond on the other side of Warren Street, west of Warren Street, it is so shallow it is really not an ideal stabilization pond. It should be avoided.

MR. DANSKIN: I have no further questions and my associate, Mr. Manna, may have some.

Thank you.

MR. DICKERSON: Mr. Ralph Manna of the Region III Office of Environmental Analysis.

MR. MANNA: Good morning.

THE WITNESS: Good morning.

BY MR. MANNA:

Q. You are aware of the commercial development on the property, Mr. McPhee?

A. Planned, possibly planned development.

Q. Planned development, O.K. Can you describe or can you locate the position of this with respect to the aquifer in that area? How does the aquifer --

A. It would probably be built around the periphery of the aquifer but I can't state that as a fact because there are no plans for it.

Q. M-m h-m-m.

A. But this area is a marshy area at present.

Q. Right.

A. Therefore, it would have some limitations as far as foundation property.

Q. Can you tell me on page 5 of the water supply report, you have indicated that the aquifer itself is 500 feet wide by 3,500 feet in length and 15 feet

deep.

A. Right.

Q. Can you tell me, and you refer to some geological studies. Can you tell me something about these studies and what they've shown of this aquifer?

A. The studies were basically the standard studies of assumptions of the capacity aquifer to store water, which becomes important in evaluating the extraction rate of water. That is basically the only thing that -- of the aquifer that you could study. In other words, we had programs which indicate thickness of aquifer, limits of volume. By studying these probings, we then came up with a volume of the aquifer.

Q. Can you give me some idea of how many probings or test borings?

A. I believe it was stated before that they ran possibly up into a hundred, between test pits, bore holes, auger holes, things like that. The exact number would be better given by Mr. Sullivan who is the project manager and in house ground water geologist for Lauman, the people who did the borings.

Q. But you have provided no formal report on this?

A. No.

Q. Can you tell me perhaps what percent of the aquifer is on H & H property or is this entirely located --

A. Not entirely, no. I can't, because our borings were limited to the easterly or northeasterly end of the Heritage property.

Q. M-m h-m-m.

A. However, the aquifer goes beyond it. I could not tell so, therefore, I could not come up with percent.

Q. I am concerned over the development -- possible development in this area on top of the aquifer. I also understand that there will be some filling of one of the ponds in that area adjoining the Stone House. This is possibly -- or it is very theoretical and I was wondering if you could possibly estimate what -- what may be lost or as a result of this covering of the recharge area.

A. From a ground water hydrology standpoint, in this type of a situation, I don't think your recharge is from the swamp area above the pond. It's peripheral.

Q. From the 431 acres draining into this?

A. Right, it's a peripheral recharge, as most of these small aquifers are, where you have swamps present on them.

Q. So, in effect, you'll really not be short-cutting the capacity of the aquifer?

A. I don't think that it would have a -- I can't-- I would be wrong to state it would have no effect but its effect would be very limited, I mean no soil is completely impervious but you do have 16 feet of overburden on most of -- in most areas above the aquifer of sand and gravel so this 16 feet being typical clays that you find in this area is highly impervious.

Q. Have -- were any studies performed to -- pardon me. Did you take notice of any other wells in that same aquifer or were any wells monitored?

A. We have investigated as far as we could through the U.S.G.S. and so forth. There are no records of wells in this area that we could find.

Q. No other homeowners with wells in that aquifer?

A. There are two other homeowners at the south-eastern or -- I say southern, eastern -- in this

case it would be the eastern end of the property that have to have wells.

Q. Were they contacted?

A. No.

Q. May I ask, whom would know more about the nature of the commercial development? At what point would this become more available?

A. I presume Mr. McGann.

Q. Mr. McGann?

MR. BLASI: May we just add, Mr. Examiner, Mr. Manna, there are no plans whatsoever at the moment. The property is not zoned for commercial use and so that there isn't anything that we could possibly say at this time, is that a fact, that would be of any value?

MR. DICKERSON: You have, in effect, put that area of your property on the shelf, so to speak.

MR. BLASI: That is correct.

MR. FLORENCE: Why don't we make that a condition of the application then, that we permanently have that available for non-development?

MR. McGANN: That is not what we're

saying.

MR. BLASI: That isn't what we've stated. That's a very smart statement on your part but I'm not going to buy that one.

BY MR. MANNA:

Q. In any case, all supporting documents do indicate that some commercial development is planned and we would like to know something more about this and as you have already indicated, you feel that the type of development would -- would not -- any type of development would not interfere with the aquifer?

A. No, it would not.

Q. This is our major concern.

A. The type of development at this moment would be similar to what Heritage has in Southbury, and their development is right down on the riverbed so it has no effect on their wells in Southbury although it's a much larger development.

Q. You've referred to some artesian conditions within this aquifer?

A. One well, I believe, actually did flow which again indicates peripheral recharge rather than recharge from the marshy area.

Q. Then any -- any final locations of wells will be located within that aquifer and there will be no interference from any development as you see it?

A. Yes, correct.

MR. MANNA: O.K.

MR. DICKERSON: Mr. Vazzan, any further questions from your group?

MR. VAZZANA: Just one question and it will be very brief.

BY MR. VAZZANA:

Q. There has been some clearing on this land, has there not?

A. Which land now, the total development, the total Heritage Hills?

Q. Take the two developments and tell me where the clearing -- where it has occurred?

A. It is an area that I am not an expert on since my concern is strictly under the sewage treatment and the water supply. This would be a case of the manager or the engineering person of Heritage to describe this area.

Q. I'm not asking you for a description. I'm speaking about what you've seen visibly, visually.

A. I understand that they've cleared the golf course and sufficient for the model homes, is that-- and some road locations.

Q. You wouldn't know how large an area that clearing is?

A. No.

Q. But there has been clearing?

A. There has been clearing.

Q. Now, the -- the trees have been cut down, is that right?

A. Yes.

Q. Could we say that?

A. Yes.

Q. But you don't know how many trees have been cut down?

A. As I say, it's an area outside of my --

Q. Yes, of course, I'm speaking purely from what you have seen, I'm not asking you for your professional advice or opinion and, of course, you don't know what type of trees those were?

A. No.

MR. DICKERSON: This might be an appropriate time to take a two- or three-minute break.

(Whereupon, a short recess was taken.)

MR. DICKERSON: Ladies and gentlemen.

I guess we're ready to resume? Mr. Vazzana?

MR. VAZZANA: If we could have just one minute.

MR. DICKERSON: Mr. Vazzana, are you ready?

MR. VAZZANA: We're completed, I think. I think Mr. Florence had some questions.

MR. DICKERSON: I think we're ready to proceed. We'll brief him on what happens. Mr. Vazzana, did you have any further questions? Have you got any further questions?

MR. VAZZANA: No questions.

MR. DICKERSON: O.K. Who's next? Mr. Alexander, in the absence of Mr. Weber, do you have any questions?

MR. ALEXANDER: Yes, I have a couple, please.

BY MR. ALEXANDER:

Q. Mr. McPhee, is it possible to compute the capacity of the aquifer, of an aquifer?

A. No. You can compute it under assumed conditions.

Q. Well, in this case, I think you've testified that you -- as to the area of the aquifer?

A. Right.

Q. And also as to the number of borings you made and the test wells that were driven, and taking into consideration all those factors, you say you cannot compute the capacity --

A. Oh, I say yes, making assumptions I can compute the capacity. I thought you were going to say compute the safe yield of an aquifer.

Q. No, no, the capacity. You cannot?

A. I can compute the capacity in the sense of the amount of water that would be stored in the aquifer.

Q. Yes, that's what I'm getting at.

A. Yes.

Q. Has that been done in this case?

A. Yes, that's been done.

Q. Did you do it or somebody under your direction?

A. My firm has done it, one of my employees.

Q. And will you tell us now what the capacity of this aquifer is?

A. I'm going to have to dig through my records to find it. Now, this capacity is really not --

Q. Is there some other witness who might be able to testify to it more readily?

A. No, there is not, but again the capacity of the aquifer is one of the parameters that has to be considered in evaluating an overall aquifer. Two or three things are important in the aquifer: The amount of rainfall that will fall on the aquifer, the amount of that, percentage of that rainfall that will enter the aquifer. Now, falling on the aquifer is falling on the drainage basin that is tributary to the aquifer. In this case, I believe that all the recharge would be peripheral. Therefore, the water that percolates through the soil on the entire drainage area will flow through the soil and ultimately end up in the aquifer. Now, that is only a percentage of the rainfall that falls on the total drainage area.

Q. I understand, but you have taken that into consideration?

A. Now, the next one is now the actual size of the aquifer in the sense of being capable of storing sufficient water so that when you draw water from the aquifer, you can pump for sustained periods

when there would be no rainfall without dewatering the aquifer.

Q. All right, but you have somewhere in your records a computation, is that correct?

A. That's correct.

MR. ALEXANDER: Well, could we agree, Mr. Dickerson and Mr. Blasi, that that will be furnished at some time when Mr. McPhee has an opportunity for the purposes of the record?

THE WITNESS: What you're asking is a calculation of the volume of the aquifer assuming a Boyd's ratio in the aquifer as far as the amount of water that will be stored in the interstices of the sand and gravel.

MR. ALEXANDER: Yes, that's correct.

THE WITNESS: Yes, that can be done.

BY MR. ALEXANDER:

Q. Could that be furnished before the hearing is concluded?

A. Yes, I may have it in my records in one of these envelopes. It would take me a while to go through it but I can dig it out.

Q. I don't want to interrupt today's hearing, but I

wonder if that can be supplied at some later time.

A. Yes, certainly in the calculation book on the project, it has to be in that book.

MR. ALEXANDER: Very good.

MR. DICKERSON: To take this one step further, do you have any data on the transmission capabilities of the aquifer?

THE WITNESS: No, no determination.

MR. DICKERSON: You don't have any calculation on transmissivity or anything?

THE WITNESS: No.

MR. DICKERSON: Does Mr. Sullivan or do you know?

THE WITNESS: It could be calculated.

We do have some drawdown information.

MR. DICKERSON: Thank you.

MR. ALEXANDER: Thank you, I have no further questions.

MR. VAZZANA: One question, sir, based upon -- one question.

BY MR. VAZZANA:

Q. Now, you're speaking about the aquifer and the effect of rain upon that aquifer, is that right?

A. Rain upon the tributary drainage area that serves the aquifer, yes.

Q. Have you taken into account in any of your studies what the effect would be assuming that we had a dry spell?

A. Yes, this is one of the reasons for the calculation of the volume of water stored within the aquifer.

Q. You've taken those into consideration?

A. Yes.

Q. Rain as well as -- where you have the dry spell over a long period of time or a period of time, is that right?

A. Right. I mean if you had a very thin aquifer with a very large drainage area, the calculation of the amount of water that would percolate into the soil might be quite large, but it would flow through the soil or across the soil and nothing would be stored. If you ran into a sustained dry spell of two months, several weeks, you would mine all of the water out of the aquifer and actually run out of water.

Q. Would you just merely repeat that last few --

A. Mine, actually like you mine minerals, you mine the water. And often they are not replaced, but in this case the size of the aquifer has been taken into consideration to account for this.

Q. And you have those figures and you will supply those studies?

A. Yes.

MR. FLORENCE: I had just a couple.

MR. DICKERSON: Well, did you have something, Mr. Blasi?

MR. BLASI: Well, there were a couple.

MR. DICKERSON: Let's clarify first of all what has been committed as will be submitted.

You --

THE WITNESS: I will, as I understand--

MR. DICKERSON: Mr. Alexander and you have agreed that you will have some data on the volume of the aquifer?

THE WITNESS: Volume of the aquifer. That is really the only pertinent data.

MR. DICKERSON: Do you have any data on the storage capacity of the aquifer?

THE WITNESS: With an assumption

based on the porosity of scils.

MR. DICKERSON: Assumption based on porosity?

THE WITNESS: Exactly.

MR. DICKERSON: Do you have any data on the coefficient of transmissivity or the transmissivity capabilities of pumping from the aquifer?

THE WITNESS: Only with the wells stabilized at a certain set rate after 60 hours. They then determine the ability for the water to flow through the aquifer to the wells.

MR. DICKERSON: Two questions I'll interject at this time: Is the aquifer fairly uniform in thickness, approximately the 15 feet mentioned in your report?

THE WITNESS: No, it's a very narrow aquifer in sense of width.

MR. DICKERSON: Thickness?

THE WITNESS: Yes, I'm saying because it is narrow in width and in a valley, therefore, to set the well we will have to find the deepest portion of that.

MR. DICKERSON: Would you have any

estimate of the aereal extent, that is the projection of the surface of the aquifer on an acreage, say 40 acres?

THE WITNESS: Yes, that's in the report.

MR. DICKERSON: Is it roughly about 40 acres or a little more perhaps?

THE WITNESS: I can calculate it. I think it's roughly 3,500 feet long and -- 3,500 feet and 500 feet wide. An estimated depth in the aquifer is estimated at 15 feet.

MR. DICKERSON: O.K. we'll take it from that, thank you.

Mr. Florence, did you have a couple questions or do you want to wait and run through the other parties?

MR. FLORENCE: Yes, I did. If you want to have the other objectors first and then I'll wind up.

MR. DICKERSON: Are you going to have any redirect?

MR. BLASI: I have very brief re-direct.

MR. DICKERSON: You will have some.

We'll take it in order then.

MR. BLASI: Very brief.

MR. DICKERSON: Mr. -- or excuse me,
Mrs. Saia here today?

(There was no response.)

Dr. Port?

DR. PORT: I am here.

MR. DICKERSON: Do you have any questions of this witness?

DR. PORT: Mr. Oehler has requested permission to go ahead of me. I have no objection if it's all right with you, but I do wish to speak after he's through.

MR. DICKERSON: We have no problems with that. You want to yield your spot to Mr. Oehler?

DR. PORT: Yes.

MR. DICKERSON: O.K. We'll do it that way, then.

Mr. Oehler.

BY MR. OEHLER:

Q. One of the concerns I have is the total amount of water that you'll need for the project. Has that

been computed?

A. 602,000 gallons per day if I'm correct.

Q. That's to support what?

A. That is to support 5,580 residents of the complex plus a potential commercial demand of 44,000 gallons.

Q. O.K. That's not to support the golf course?

A. That is not to support the golf course. 602,000 gallons per day is estimated.

Q. In other words, you'll be recycling the water or additional water will have to be found to irrigate the golf course?

A. If the golf course is to be irrigated.

Q. Well, do you know of any golf courses that are not irrigated?

A. Well, up to about two years ago, the course I play on.

Q. Are there plans to irrigate this course?

A. I couldn't answer that question. I'm not familiar with the construction of that. It's not my part of the project.

MR. BLASI: Do you want to ask him?

MR. CEHLER: Yes, I'd like to.

MR. BLASI: I mean it's out of order.

MR. DICKERSON: Can you answer the question?

MR. McGANN: There are plans to irrigate the golf course, yes.

Q. So if the state doesn't approve the use of the recycled water, then there must be additional water found to irrigate the golf course?

MR. McGANN: Well, it would be, I believe -- my understanding is that it is a surface water source for irrigation. I don't know much of the particulars but it will not be irrigated out of the water supply, not the potable water supplies.

MR. OEHLER: I understand that. Any indication of where that surface water would be found, from Brown Brook, in the basin of Brown Brook?

MR. McGANN: I guess so. I'm not familiar on the detail in that detail.

MR. OEHLER: O.K. Fine, I'll continue.

MR. DICKERSON: All right, back to Mr. McPhee.

MR. OEHLER: Yes, sorry.

Q. 44,000 gallons per day supporting the commercial and

community activities. Is there a split between the commercial community, do you know what it is? There are certain community activities, the phrasing in the report says commercial community. How much water is really going to go to the community?

A. No, there's no -- this was based on the norms taken from the Southbury development, an overall.

Q. Can you give me a size of what kind of commercial activity that would support? Would it support a motel of a hundred units?

A. Oh, yes.

Q. Would it support a shopping center?

A. Dry operations, as long as they were substantially dry operations which is what they're having in the Southbury.

Q. Does that mean no water cooling, air conditioning?

A. No, water cooling would have to be by cooling towers, only make-up water. You would not use a once-through on the air conditioning.

Q. So the total, as far as you see, the total projected water supply of 602,000 gallons --

A. -- and '2,000 gallons per day.

Q. Per day average?

A. Annual average.

Q. Annual average, and there's a peak of plus 30 percent?

A. 30 percent for the maximum day.

Q. In your opening statement, you identified that perhaps there were other aquifers around. I think you said two if I'm not mistaken. There were two possible sources of aquifers?

A. Yes.

Q. Two possible locations. I assume that the one is, in fact --

A. Brown Brook.

Q. -- Brown Brook near the area of the utility section?

A. Right.

Q. O.K. You made well testings in that area?

A. Made one test well there.

Q. And the supply didn't look promising?

A. Did not prove promising.

Q. O.K. So most of the wells then were in the commercial property in the Kipp --

A. Off the Somerstown Pike.

Q. I feel more comfortable calling that the Adams property because it was the Adams property.

MR. DICKERSON: Essentially you're

referring to the area outlined in green on Exhibit 4 or approximate boundaries?

MR.OEHLER: Yes, thank you, that's the property.

MR. DICKERSON: O.K.

MR.OEHLER: I'm a resident and I know these things by the names of the owners.

MR. DICKERSON: O.K. For sake of reference, that green boundary and your terminology "Adams property" will be considered for purposes of this record.

Q. So far as you know, there doesn't seem to be any other promising aquifers on the Heritage Hills property?

A. Those two, only those two looked promising. We have explored those two.

Q. Have you looked at neighboring properties?

A. No.

Q. O.K. You've identified the aquifer as an area marked on Exhibit 23 in blue, identified that the three wells were in that aquifer. That's almost my home; I know the area quite well. This map, in fact, is not correct. There is a marshy area that extends under the Route 100 -- not Route 100, Route 202, that

extends all the way over to this pond which is called Stone House Pond.

MR. DICKERSON: Would you please label the pond? There's an unmarked pond on Exhibit 23 which will now be labeled for reference as "SH" indicating, I presume, Stone House Pond.

MR. OEHLER: Stone House Pond, that's correct.

Q. This entire area here, this basin, is a marshy area?

A. Yes, apparently there is a drop in contour 10 feet between this bog and --

Q. That's correct.

MR. DICKERSON: The witness indicated that the area surrounding the Stone House Pond is a lower area than the -- or a marshy area lower than the elevation of the highway? You'll have to speak up so we can all hear.

THE WITNESS: O.K.

Q. The contour line is 10 feet. I'm not a surveyor, I can't judge it. I walked the property many times. It seems to be that or less than -- given the probability that the one side is at 11, the other side is at 9, it could be only a two-foot difference.

It may be as much as 10 feet.

A. Well, the only thing I can go by that there is indicated here from a U.S.G.S. bench mark of 224 at Route 100 and the level of the pond is 218.

Q. The pond does --

A. So it would be six feet below, below where 202 crosses the brook.

Q. Yes.

A. Questionmark Brook.

Q. Yes, fine, the stream does go under the highway though so it is lower than the highway?

A. Yes.

Q. O.K. All right. Now, I'm not a geologist. Now, you're the expert. You did not, however, investigate any of the area on the other side of the road?

A. No.

Q. You don't know, in fact, whether that aquifer goes across the road?

A. It may cross the road.

Q. It may cross the road. Do you have any idea of the number of wells that are in that aquifer on the other side of the road?

A. No.

Q. My problem --

MR. DICKERSON: You're going to have some statements to make which you'll have to make when you present your affirmative statement, O.K.?

MR. OEHLER: I understand that, I understand that. Thank you.

Q. Could I identify the 431 acres that feed this aquifer, approximately?

MR. FLORENCE: Ask him to do it in a green pen.

MR. OEHLER: Yes, he's doing it with a green pen.

MR. DICKERSON: Let's go off the record while he marks it.

(Discussion off the record.)

MR. DICKERSON: Ladies and gentlemen. During our break here, we've been marking Exhibit 23 with my many colored pen set. The Exhibit 23 has been marked with a green marker pen to show the approximate limits of a tributary watershed or tributary drainage to the aquifer in question. The area of recharge to the aquifer has been indicated with a red marker pen and with that, I will let the witness

describe further what the markings signify.

THE WITNESS: Do you want to use this as an exhibit?

MR. DICKERSON: We will mark for identification as Exhibit No. 29 a copy of the Croton Falls Quadrangle, a copy of a portion of the Croton Falls Quadrangle which has markings on it in red marker pen. You can describe that significance, please.

(Copy of a portion of a U.S.G.S. Quadrangle sheet, Croton Falls, was marked for identification as Exhibit No. 29, this date.)

THE WITNESS: The drainage areas tributary to the aquifer, to the lower end of the aquifer, has been defined along the ridge lines so that the flow from these ridge lines will concentrate in the area of the aquifer.

MR. DICKERSON: So this drainage area is outlined in red on Exhibit 29 and approximately outlined in the green on Exhibit 23. If there are no objections, I will receive 29 into evidence as the more accurate outline.

MR. FLORENCE: No objection. Who drew

it?

(The witness raises a finger.)

MR. DICKERSON: The witness has indicated that it was prepared by himself.

(Exhibit No. 29, previously marked for identification was received in evidence, this date.)

BY MR. OEHLER:

Q. You said before that the aquifer is recharged on the periphery marked in red on Exhibit 23?

A. We have made this assumption that it is a peripheral recharge. Now, there may be some top recharge over the aquifer but it looks as if the majority of the aquifer is overlain by materials which are highly impervious.

Q. I see. Where does the water come from that comes into the periphery recharge?

A. It's runoff that percolates into the overburden over the rocks and the sides of the hill into areas where sand and gravel may be exposed on the periphery.

Q. Do you have any idea of the number of septic -- septic fields in the drainage area?

A. No, no more than what is shown as the number of dwellings on the U.S.G.S. map.

Q. I point out that this is a 1960 map.

MR. DICKERSON: Noted, and you can amplify that with your positive statements, I'm sure.

MR. OEHLER: Fine.

Q. The roads in the area, sir, how many roads are in that area, in the drainage area?

A. Mainly two principal -- one principal road, the state highway system. The state highway system is -- well, within the drainage area. Well, you have Route 116, Dean's Bridge Road, and 202.

Q. O.K. There is also a road that's demanded by the Zoning Board of Appeals, Primary Access Road No. 5 on Exhibit 22, into your development. That --

A. An additional road in the development, yes.

Q. An additional road in the development. Is there any other roads in the development planned?

A. No, not to my knowledge.

Q. Do you have any idea how long the roads are?

A. No, I haven't measured them.

Q. Or the traffic pattern of the roads?

A. From my discipline of engineering, it's really of no significance.

Q. How about development in the area that you have

Condo. 1 approval for Heritage Hills now, is that situated in this drainage basin?

A. No, I don't think it is.

MR. OEHLER: Can we go off the record for a minute?

(Discussion off the record.)

MR. DICKERSON: Let's go back on the record.

BY MR. OEHLER:

Q. O.K. Are you aware that there's any plans for development of Heritage Hills?

A. I know that we are building model homes in the Brown Brook drainage. At least I am pretty sure they're in the Brown Brook drainage basin so whether there's one of them goes over the saddle, the ridge line and goes into there, I don't know.

Q. Do you know if there are any new home constructions outside of your area that are in that -- in that drainage basin?

A. No.

Q. The Mitch Miller property, for instance, is that --

A. That's not in that drainage basin.

Q. The commercial area itself, that is the Adams

property, what percentage -- do you have any idea what percentage of the property is developed in that -- developable now?

A. No.

Q. Some of it is marshy?

A. (Witness nods head.)

Q. Do you have a percentage of it that is?

A. No, I don't.

Q. Do you know anything about the previous use of that land?

A. No, I don't.

Q. The Adams property.

A. Except that apparently there was some gravel mining in there at one point. It appears that way.

Q. There was a gravel pit operation in that area?

A. Yes.

Q. Do you have any idea how long it went on?

A. No.

Q. Where does the aquifer flow, do you have any idea where that water goes?

A. It has to flow -- all your streams course toward the Croton River. Only by further exploration will you actually be able to find the limits of the

aquifer for yourself from the saddle but I doubt if the aquifer crosses the saddle. It flows with the saddle going southwest.

Q. I've asked you this before but let me ask you again: Is there any other aquifer in that immediate area?

A. That's -- and I can't answer that. We didn't explore beyond the limits of the Heritage property. Whether it is a continuous aquifer under Route 100 down to the river, the Questionmark Brook to the Croton River, or actually if there are separate aquifers with possible rock dams between, I don't know.

Q. Because we have no idea of the number of wells in any other surrounding aquifers?

A. No.

Q. O.K. Now, I asked this question yesterday. Let me ask it of you now: Suppose there are other aquifers in that area. Suppose, in fact, your aquifer flows into another aquifer. Suppose, in fact, that wells in those other aquifers dry up because you've taken the water out that normally would flow into their aquifer. Is there any way to prove that?

A. Is there any way to prove what?

Q. That, in fact, the draining of water in your aquifer has affected the water available in other aquifers further down, at a lower elevation?

A. I suppose the proof would be in the failure of the well.

Q. Do you know of any cases in legal insurance claims and so on that have been satisfied?

A. None specifically, no.

Q. What would you do if your well was in an aquifer that was further down --

A. Well, what would I do, in what sense?

Q. What steps?

A. If it failed?

Q. If it failed.

A. I would seek recourse.

Q. Do you have any guess as to the probability of success of the recourse?

A. I think it might be something that discussion could go on as far as -- an extensive discussion as far as the proof of failure. It could be whether the proof of failure was due to a climatic condition at that time or the proof of failure was due to the additional mining of water. If Heritage was still

pumping water and your well failed under climatic conditions, then the proof would be in your favor. If the well failed due to mechanical failure such as plugging and so forth, then you would have no recourse. I don't think there are any wells -- I can't make a positive statement -- in the aquifer. I believe most of your wells in this area are rock wells.

Q. Most of the new wells, in fact, in this area, in fact, are rock wells.

A. Going down 150, 200 feet in some cases.

Q. The established base line is more than 200 feet.

A. Yes. So in that case, the 200-foot wells would not be affected because the recharge of rock wells is not a science and nobody can project it.

Q. So, in fact, if a rock well failed you would have no recourse?

A. Failed, you would have a rather difficult time proving that your rock well failure was due to the extraction of water out of this aquifer.

Q. O.K. I want to turn my attention to the well tests for a moment. When was the well test done?

A. I think I stated before in testimony that they

were started sometime in November and continued through January.

Q. What was the weather conditions during the period of the test, the amount of precipitation?

A. I'd have to look that up.

Q. Are they available?

A. Mr. Sullivan's report, his driller's report, actual field report usually records that.

Q. Does it record previous rainfall, say, of two weeks before or a month after?

A. Oh, no, no.

Q. Just during the time we're pumping?

A. Just the weather as of the time observed for that working day.

Q. All right. It was done in November through December?

A. November through January.

Q. Through January.

A. Through the last well testing which was either done in late January or early February. I'm not sure. Again, Mr. Sullivan will have all of these facts and he will be available, as I understand it, this afternoon.

Q. I was confused about something you said yesterday,

that, in fact, the wells were pumped for 60 hours when some statement was made by somebody about having to be pumped for 120 hours.

A. Well, the state sets two requirements and they have a question as to the safe yield of the wells. They may require it to be pumped for 120 hours.

MR. DICKERSON: For the record, you might indicate that's the State Health Department's design standards.

THE WITNESS: Yes.

MR. DICKERSON: O.K.

MR. OEHLER: Which is, the 120 or the 60?

MR. DICKERSON: That is a requirement of the State Health Department.

THE WITNESS: It's in their bulletin--

MR. DICKERSON: It depends on Mr. Faustel's ruling.

THE WITNESS: It's in their guidelines, I question whether it's a ruling.

MR. DICKERSON: All right. We will classify them as a potential requirement of the State Health Department and if it is deemed necessary

it is included in their guidelines for design of water systems.

BY MR. OEHLER:

Q. You have identified three wells. There is an extensive marsh area as well as a pond in that area. Were all of those wells within the marsh area?

A. No.

Q. Which one was?

A. One was in the gravel pit or near the gravel pit and one was in the marsh area.

Q. One and two were both in the marsh area, is that not right?

A. Well, again, those are approximations by eye and not actual locations. The description number 1 is the lower well.

MR. DICKERSON: By "lower well," you mean southernmost?

THE WITNESS: The further down, going further to the east, the easterly well, if you want to call it that.

MR. DICKERSON: O.K.

THE WITNESS: No. 2 was in the swamp area and No. 3 was in the gravel pit.

MR. DICKERSON: And No. 3 would be the one geographically most southerly, is that correct?

THE WITNESS: Southerly, right.

BY MR. OEHLER:

Q. I'm sorry. I missed what you said about No. 1 and 2, No. 1 and 2 were in the marsh area?

A. No, I believe No. 1 is out of the marsh area. No. 2 is in the marsh area and this is further up in the gravel pit. This, as I spotted them, and by eyeball they are more accurately plotted on that map as far as their location.

Q. One of the wells is currently still in the ground. Which one is that?

A. I couldn't tell you which one of the numbers it is.

Q. Does anyone know?

A. I --

MR. DICKERSON: Will Mr. Sullivan be able to answer that question?

THE WITNESS: Yes, he would, he would be able to answer that.

Q. I ask the question again about those hours. Is the 120 hours or the 60 hours from the point of reaching

equilibrium or is it just the total test period?

A. The 60 hours was reaching what is called stabilization.

Q. 'Til it reaches stabilization?

A. No, it has to be maintained for a period of time and considered to be stabilized several hours before that and then continued beyond that point with no change in the drawdown.

Q. For how long a period of time?

A. I believe in these cases it was approximately four hours. Now, I can read the section from "Public Water Supply Guidelines, Designing Water Systems," which is Mr. Faustel's Bible, to use that term:

"Test wells. Pumping tests of wells shall not be run less than 24 hours and may be required as long as 120 hours if necessary to develop stabilized drawdown within the aquifer." We found stabilization at 60 hours, so we fell within the limits.

Q. No. 1 and 2, the wells seem to straddle the pond, is that correct? No. 2 is on the southern side, No. 1 on the northern side of the pond.

A. I believe so, yes. The No. 1 is the one that is

considered not in the swamp.

Q. Yes.

A. The No. 2 is on the other side of the pond in the marsh.

Q. Do you know how deep the pond is?

A. No.

Q. Do you know whether or not the -- in fact, the pond reaches down into the aquifer?

A. No, I'm pretty sure it doesn't but I have no positive knowledge of the depth of the pond. It appears to be quite shallow.

Q. When you pump, you pump a lot of water, 700 gallons a minute or something?

A. (Witness nods head.)

Q. Where did you pump it to?

A. Into the -- into the brook, Questionmark Brook.

Q. At what point?

A. At the point near the -- near where the well was.

Q. Is it true that that would have raised the level of water of the marsh?

A. No, no. It would have raised the level of the marsh, yes, by the amount of water we had pumped.

Q. Would it have, in fact, moved to the corners of the

marsh and peripherally recharged?

A. No, no.

Q. Why not?

A. Well, we're talking quantity of water to -- I think to most people you talk 700-and-some-thousand gallons per day, it appears to be a tremendous quantity of water. Seven million gallons a day is only 700 gallons per minute. That is equivalent to approximately three fire streams, that's all.

Q. But depending on the level of water in the marsh and how close it was to the periphery, that's a lot of water. How much water is that over that surface? I don't know what the surface is.

A. No, it wouldn't run away because the brook in this case has more than sufficient capacity to carry it through the marsh into the defined limits of the brook. It would not spread out.

Q. You placed more than -- almost a hundred wells in that marshy area?

A. No, not wells.

Q. I'm sorry, test borings.

A. Test borings, auger holes, test pits, what-have-you.

Q. Did they reach the aquifer?

A. Yes, to --

Q. Could it be --

A. Some of them did, some didn't, because the aquifer ran out. As we continued to explore where the aquifer was --

Q. Could it be that some of the water that you pumped on the surface reached the aquifer through these test borings?

A. Possibly but I wouldn't think it affected the aquifer test.

Q. Did you measure any drop in the level of the pond when you pumped?

A. No.

Q. Did you measure any drop in the Stone House Pond when you pumped?

A. No. Stone House Pond is, I would state, about six feet lower than the areas we were pumping from.

Q. That may be true, but the aquifer is 15 or 16 feet below a clay overburden and it extends 15 feet below that.

A. M-m h-m-m.

Q. So it certainly could be then that an aquifer could extend under Stone House Pond?

A. Well, actually in one case it was recorded, I believe, and Mr. Sullivan will have to give you the details on that. It was actually a flowing well. The pressure on the aquifer was above the surface of the brook.

Q. Number two, I may point out, is in fact that well; it's still flowing.

A. Which indicates peripheral recharge not from the swamp. It is feeding the swamp rather than coming out of the swamp.

Q. But you did not make any study or have no feeling for what would happen to Stone House Pond in the long run with a lot of pumping in the area?

A. No.

Q. I may point out that Stone House Pond is used for recreation by residents of the town.

A. Actually most of these questions would be better answered by Mr. Sullivan whose organization did the testing. He has more specific knowledge of it.

Q. Has there been any records of the pond depths over the years, that you know of?

A. Not to my knowledge, no.

Q. O.K. You made a statement yesterday that no wells

of this magnitude have ever been made in this area, is that correct?

A. To my knowledge.

Q. And yet you're not sure of the size of the aquifer; that is, how far it extends, the impact of it on Stone House Pond, the number of septic fields in the area, drainage from them, drainage from the road, is that correct?

A. State your question again and I may be able to answer it.

Q. You've made -- would you read the question back?

(The pending question was read by the reporter.)

A. No, I do not know what the effect would be on Stone House Pond nor do I know how many septic tanks there are in the -- in the aquifer, but I do know the quality of the water that was taken from the wells indicated that there was no pollution coming from septic tanks. There was a very high quality water, total dissolved solids of somewhere around 150 milligrams per liter, very low in any of the other trace elements which would indicate pollution.

Q. Was it low in iron content?

A. I'd have to look back here. Less than one-tenth of a milligram per liter, very low.

Q. How about nitrates and phosphates?

A. Nitrates, 1.3 as nitrogen.

Q. Is that very low?

A. That's low.

Q. And phosphates?

A. I don't think it was examined for phosphates.

Actually, once the phosphates enter the soil, the soil has an ability to acquire phosphates and hold them, not to give them up to the water.

Q. Is there any doubt in your mind about the adequacy of these wells and the water source?

A. No, not for the quantity we're anticipating.

Q. In the water report -- I don't know what the number of that is, No. 5, I believe?

MR. DICKERSON: Water supply report is Exhibit No. 5.

Q. (Cont'd.) All right, on page 5 -- excuse me a second, I left my notes here. You show the phasing of the commercial development as 22,000 gallons in your year three and 22,000 gallons in year four, is that correct?

A. What page is that?

Q. Page 5. It's implied in the figures.

A. It's implied. I'd have to go back and run the calculations to be aware of that.

Q. And I didn't add these things up but is the approximation by the end of year four that there would be 3,000 people living in the residential area; is that correct?

A. 3,000 people.

Q. About 3,000 indicated for the end --

A. Indicated, approximately 3,000, yes.

Q. Approximately 3,000 people, and on page 6, you said that the -- I think it's page 6. There's enough there to support -- I haven't got the right page.

A. 5,240.

Q. 5,240 persons?

A. This is -- this is based on the New York State requirement for actually our estimation. There is more than that. If you read the entire section under 5, the aquifer that is described in Section (c)3 of this report was first pumped at 730 gallons per minute. Since this is a single source ground water supply, the state requirements as discussed in

Section (c)4 will allow the developer to consider half of this supply or 365 gallons per minute as the amount of water available for consumption. This amount of available water provides a daily volume of 524,160 gallons per day based on a hundred gallons per capita per day. This supply is sufficient for a population of 5,240. We actually, in my statement yesterday, indicated that we will put pumps in there that will be able to meet the full development of 550 gallons per minute.

Q. So you have not shown that capability yet in that water source; you have not demonstrated that you can pump that much water?

A. Oh, yes, we have demonstrated we can pump 3,700-and-some gallons per minute.

Q. To twice the limit required by the state?

A. That is the 5730. Now, the state's interpretation of this on a further session with the state has indicated that a letter to Mr. Faustel --

MR. BLASI: It isn't in evidence yet.

A. (Cont'd.) -- that the state in a review of this report in preparation for this hearing, I believe the letter from the state is part of the hearing.

You referred to it on the first day.

MR. DICKERSON: I have received objections from the State Health Department.

THE WITNESS: Well, this would be the letter, the same letter indicated the adequacy of supply. We have met with the state since then and gone over our records with them and they indicated that our supply was adequate.

Q. It does, in fact, meet them twice?

A. Meets their requirements.

Q. Twice?

A. The interpretation of twice was my interpretation. The interpretation of the Chief of the -- I don't know whether it's the Chief -- Bumstead is the Chief. I don't know what Gil Faustel's title is, but a meeting with Gil Faustel of the State Health Department indicated that the interpretation was too strict on my part, that the state requirement was met.

Q. Has that been offered in evidence?

MR. FLORENCE: May I respectfully object to --

MR. DICKERSON: Well, let's get one

thing clear. Mr. Faustel, Gilbert Faustel, P.E., is the Chief of the Water Supply Design and Construction Section of the Bureau of Public Water Supply of the Division of Sanitary Engineering of the New York State Department of Health.

MR. FLORENCE: May I respectfully object to any conclusions or any negotiations or any discussions with persons of the state, particularly to any conclusions which may be attributed to those persons. I understood that if we had state approval that there would be no reason to have this hearing for openers. Secondly, I'd say that it's irrelevant and first of all it's hearsay of the rankest kind. Not only is it hearsay but it's conclusory and beyond that, it doesn't even respond to the question which is even a greater sin.

MR. BLASI: Well, Mr. Oehler is asking the question, you're objecting to an answer given to Mr. Oehler but aside from that, I --

MR. FLORENCE: He seemed dissatisfied with it, with the response.

MR. DICKERSON: I think we shall thrash the problem out but, Mr. Blasi, continue.

MR. BLASI: Just a minute, please. The reason that this problem has come up at this point is that there is some further material which is going into evidence which has to come into this case as a result of the representative of the County of Westchester acting directly presumably on behalf of the State Health Department. We haven't reached that point yet. Mr. Oehler happened to ask a question which related to that phase of the matter. Now, subject to that being produced, Mr. McPhee can give that answer. Now, he gave it without -- subject to that being produced. Now, that's the entire explanation of it.

MR. FLORENCE: The explanation still fails to address itself to the objection and that is if Mr. McPhee has any personal knowledge he can so state. If he has any problems with his personal knowledge as relying on other reports, other work, other persons' work products --

MR. BLASI: He has --

MR. FLORENCE: -- excuse me. -- or any other memorandum or data to which he's not a party, then of course I continue my objection.

MR. BLASI: Mr. McPhee happens to be very much of a party to this and he has personal knowledge of it. What you are objecting to is something which has not yet gotten into the record. That's the only problem. Now, if --

THE WITNESS: I think I can clarify this, Peter, by just reading --

MR. BLASI: Go ahead.

THE WITNESS: Reading the -- again Mr. Faustel's manual.

MR. FLORENCE: I'm going to -- is that in evidence?

THE WITNESS: "Public Water Supply Guide, Designing Community Water Systems, New York State Department of Health," and this was sent to all consulting engineers July 17th, 1973.

"Public water supply guide, designing community water systems, is attached. This is a revised and expanded edition of Water Supply Guide for Design Engineers issued in February 1969. The February '69 publication no longer in effect should be discarded.

"Designing community water systems

should be utilized in conjunction with recommended standards for water works of the Great Lakes-Upper Mississippi Board of Sanitary Engineers, 1968 edition, and includes addenda No. 1 through 9 for the recommended standards of water applied. Mr. Gilbert Faustel, Chief of the Water Supply Design and Construction Section, Albany, "so and so," should be contacted concerning design of community water systems."

On page 10 of this --

MR. DICKERSON: Before we go any further, you want it submitted into evidence or do you want me to take judicial notice of the two official publications of the Health Department?

MR. FLORENCE: If you'd like to do that, I suppose you can. That won't make any more dignity to the quality of the question.

MR. DICKERSON: We're still wandering afield. Do you want me to take judicial notice of those two documents?

MR. FLORENCE: If they, in fact, exist, I think you're permitted to and on your own motion, certainly you may.

MR. DICKERSON: If any party wishes to supply copies of these documents as exhibits, I'll receive them, but in the meantime, I'm not going to part with my copies.

THE WITNESS: I'm not going to part with mine.

MR. DICKERSON: We will take judicial notice of the New York State Department of Health Bulletin No. 42, the 1968 Edition, entitled "Recommended Standards for Water Works, Policies for the Review and Approval of Plans and Specifications for Public Water Supplies." This is a report of the Committee of the Upper -- of the Great Lakes-Upper Mississippi River Board of State Sanitary Engineers, and I will take judicial notice of a document entitled, "A Public Water Supply Guide, Designing Community Water Systems," which was published by the New York State Department of Health under the direction of Hollis S. Ingraham, M.D., Commissioner. This document contains certain requirements, desirable standards, recommendations. It contains a copy of Part V of the State Sanitary Code, a copy of Part 72 of the State Sanitary Code and it contains

Addenda numbers 1 through 9 of the aforementioned Bulletin No. 42. I'll try and get copies by the time we resume but for now, I'll take judicial notice of them.

THE WITNESS: On page 10 of the Department -- the state, New York State Department of Health "Designing Community Water Systems Guide," under "Ground Water Resources: A minimum two sources of ground water must be provided. Exceptions: A well in a permeable granular aquifer capable of providing twice the average daily demand of the system it supplies as conclusively demonstrated by sustained pumping tests. When low yield wells are in rock, two or more wells must be provided and assuming that the well with the highest capacity is out of service, the remaining wells must have a capacity to supply at least twice the average daily supply."

Mr. Faustel, on a further interpretation of this in a meeting with Mr. Faustel, said, all right, since we have granular -- a granular aquifer, a permeable granular aquifer, therefore we are designing for 550 gallons and we have demonstrated we can extract 730 and, therefore, we have an adequate

water supply.

BY MR. OEHLER:

Q. May I ask is that written, documented?

A. Is that documented?

Q. That conversation with Mr. Faustel?

A. That is a conversation with Mr. Faustel. I presume that since Mr. Faustel is not present to give testimony that he has indicated either to the County Health Department that he has withdrawn some of these objections or the objections still stand. I can't answer that.

MR. DICKERSON: At the moment, technically, the objection still stands.

MR. FLORENCE: More than that --

MR. DICKERSON: I have been advised verbally by Mr. Faustel --

MR. BLASI: Just a minute.

MR. DICKERSON: -- that a document withdrawing the State Health Department objections was being prepared and was to be transmitted to my office. It was not received as of the time I started to hold this hearing and, therefore, legally the objections still stand at this moment pending receipt of said

document.

MR. FLORENCE: I would object to those portions of the answers which attribute statements to the other persons than the speaker himself. I can -- I don't have any objection to his stating what he did or what -- as a result of a conversation, that he had conversation.

MR. DICKERSON: Do you have any objection to what he has testified under oath to what he has heard?

MR. FLORENCE: Well, yes, from a non-party, yes.

MR. BLASI: Well, I think, Mr. Commissioner -- Mr. Hearing Officer, you have to take that subject to connection.

MR. FLORENCE: Worse than that, it's-- subject to connection?

MR. BLASI: Yes, it's not hearsay. You have just heard this Examiner state that he has been advised that those objections were removed and that the removal was coming by letter. He hasn't received it yet. Just ten minutes ago or a few minutes ago, I mentioned that this was to be handled

and it will be handled. Now, the only way he can take it is subject to the verification or connection as to what is happening henceforth.

MR. FLORENCE: You're not talking about--

MR. DICKERSON: My ruling on the answer is that the objection is overruled. Mr. McPhee has testified under oath that he was a party to a conversation or one-half of the conversation and that was what he heard to the best of his knowledge. The matter of the outstanding objections of the New York State Health Department as of this moment and until I receive a formal withdrawal of their objections, they will remain in force.

BY MR. OELHER:

Q. Mr. McPhee, how long have you been a resident of Westchester County?

A. 25 years.

Q. Been practicing public engineering in Westchester County?

A. I have worked in Westchester County. I've worked all over the world in these 25 years, as far as consulting engineering is concerned.

Q. Now, are you familiar with the installation of the

Delaware Aqueduct that occurred in 1936 and 1946?

A. I'm familiar with it in the sense of having studied it in school. I also participated in the first INCODEL Report, which was the first agency to develop water supply for the area from Philadelphia through Connecticut which studied the Delaware Aqueduct system, the Catskill Aqueduct System, the Croton Aqueduct System, both the new and the old.

Q. My point is, are you aware that there was a massive water failure in the hamlet of Armonk due to the installation of the Delaware Aqueduct, a disturbance of the aquifer?

A. No, I'm not.

Q. I'm going to change the subject. I want to go into sewerage.

MR. DICKERSON: Would you prefer to save that until after lunch?

MR. OEHLER: I'd really like to get this off my chest.

MR. DICKERSON: O.K.

Q. I pose a hypothetical situation. Suppose the sewerage from your plant -- I'm sorry, I shouldn't say that because it's the wrong word. Suppose the

treated water that comes out of it --

A. I like the word "renovated."

Q. Renovated, thank you. -- the renovated water that comes out of your plant was saved in a tank, suppose the state allowed you to drink it. Would you?

A. I would.

Q. For how long a period of time?

A. As long as necessary.

Q. Would you drink it for a year?

A. I might if I were required to.

Q. A hundred years if you lived that long?

A. No, I'd never live that long. I haven't got that many years left.

Q. So as far as you see, there is no problem with that water. That water is as good or better than most of the water sources in the area?

A. As I state right now, that water is better quality than water that is flowing down the brook.

Q. That's not the question, sir.

A. Well, let me finish my statement. That water then goes into the Croton water system. I drink Croton water and I think it's the worst water on earth.

Q. I have to agree with you, but there is better water.

A. I drink it and I have been drinking Croton water for 25 years. I'm still here and I'm still talking.

Q. Are you aware that there is better water in this area?

A. Better water, from what I have seen of this well water I would take it any day. In Briarcliff where I live, we have wells in Croton. I happen to live on the side of the village that gets Croton water. I wish I lived on the other side of the village.

Q. You would prefer to drink well water as opposed to, for instance, the renovated water?

A. No, the renovated water will actually be much better than the Croton water. I would prefer drinking the renovated water to Croton water.

Q. Would you prefer it in case of an accident with the sewer plant?

A. Of course not.

Q. All right. I'm going to take a real situation now. Did you measure the rainfall during the testing of the Brown Brook? There's a -- in their sewer report, and I don't know what number that is because there's about three of them --

MR. DICKERSON: I believe you're

referring to the flow data on page 7 of Exhibit 21.

MR. OEHLER: Thank you, that's correct.

MR. DICKERSON: I'll hand that over to
you.

Q. Is there a --

A. No, there was no rain gauge set up.

Q. There is no -- was there a precipitation measurement
taken during that period of time?

A. No, no, there was no precipitation measurement
made during that period of time.

Q. Is it standard practice not to take measurement of
precipitation to see how much is --

A. We were looking not for runoff; we were looking
for minimum flow on the stream.

Q. How can you tell what's minimal when you don't have
any idea of what the rainfall is?

A. Actually, by using this data in conjunction with
the available data from the nearest weather bureau
station which really would be meaningless, because
the weather bureau station, I think the closest one
is at the White Plains Airport.

Q. So there is no real correlation of the rainfall?

A. No.

Q. With the flow of water in that brook?

A. This data was put in the report to establish that there were no long-term records available on this brook and that some spot measurements made on dates through August, from August 31th through September the 16th were as follows: Now, the following statement after that says, "Due to the small drainage area and the lack of flow records, the New York State Department of Conservation considers streams similar to the one being studied to be intermittent streams." Therefore, the significance of the flow data drops out. It has no significance.

Q. "Intermittent" means it doesn't run at some times during the year?

A. It dries up.

Q. It dries up. Have you checked with any of the residents in the area to determine if, in fact, that stream does dry up?

A. We've made inquiries. Nobody could actually state, in fact, whether they ever recalled it drying up but that doesn't prove anything.

Q. Would a statement by someone who did indicate it?

A. If somebody -- if somebody actually could come

out and swear that he had gone out every day and looked at that stream and recorded it on a -- in a diary and made a record of it, then it might then become significant.

Q. Thank you. Are you aware that that there was a five-year drought in Westchester in the years 1964 through '69?

A. Yes.

Q. Have you any idea what the impact of the -- of that was on the wells, the water table, the reservoirs in this area?

A. No.

Q. Were you concerned about the possibility of another drought?

A. We have to, certainly.

Q. What steps have you taken?

A. In this case, we're indicating that we would proceed if this were to occur and that the wells appeared to be inadequate. We would seek other sources of water.

Q. O.K. How about the sewerage plant. Is there any steps necessary, is there any mixing of -- mixing requirement?

A. Mixing of what?

Q. Mixing of the stream with the discharge?

A. No, the sewage treatment plant has to be designed to meet the state's criteria that that stream will be dry, and getting back to the memorandum from the state from Paul W. Eastman, Director of the Division of Pure Waters, when such discharges must be sanctioned, effluent quality must approach that of a relatively unpolluted stream. Effluent quality shall conform with the following concentrations, and that's what we're designing, to state requirement, that the stream will be dry and, therefore, the effluent from the treatment plant will approach that of a relatively unpolluted stream.

Q. I agree with you that it is more unpolluted than the Brown Brook is currently and I wonder if you've worried about the problem of other water sources in the nearby area and what it would do to them?

A. I don't follow your question as far as other water sources in the area of Brown Brook discharging sewage in the Brown Brook and other water sources.

Q. There is flow, is there not, from a stream of -- at what, a higher elevation into a lower elevation,

percolation, and especially if the area is gravel?

A. Again, I'm confused by what you're driving at.

MR. OEHLER: All right, I'll let it rest.

MR. DICKERSON: Are you trying to get at the question of the stream contributing to the ground water or vice versa?

MR. OEHLER: Yes.

MR. DICKERSON: With this question of a policy determined intermittent stream versus the actual situation?

MR. OEHLER: Yes.

MR. DICKERSON: All right, I want to get this clear. Your testimony is that whether or not Brown Brook actually goes dry and is truly an intermittent stream, any stream that the Department considers to be or has a potential to be an intermittent stream must meet certain standards which standards are, in fact, more rigorous than that for Class "A" waters?

A. Yes.

MR. DICKERSON: This has been a point that's reoccurred at least three times in the

hearing. There has been a policy determination as indicated by Mr. McPhee by a certain division of the Department that if the Department considers the stream from its policy point of view to be intermittent, then they impose over and above the standards required under the stream classification certain additional standards and these standards are more rigorous than that of a drinking water source and this, I think, has been causing some confusion. Is this understood? Whether Brown Brook goes dry or not, they consider the flow in Brown Brook to be so small that the absolute optimum requirements are imposed on it and these requirements are imposed on all streams that have a potential for going dry.

MR. FLORENCE: It goes dry with the exception of the sewage which will then --

MR. DICKERSON: When any stream, with or without sewage, if the stream has a potential for being considered an intermittent stream, as a policy determination as opposed to, in fact, going dry, the stream may trickle a little bit forever and never quite make it to a dry streambed.

MR. FLORENCE: I understood --

MR. DICKERSON: There are certain standards imposed on this that are very rigorous and this is what I'm trying to clarify.

MR. FLORENCE: I understood the question mean what happens when sewerage, or this --

MR. OEHLER: Renovated?

THE WITNESS: Renovated.

MR. FLORENCE: That's a funny word. -- renovated water should percolate into any of the aquifers, either those existing for the water supply of this particular application or other aquifers.

MR. DICKERSON: That's the second point I wanted to clear up. Is everybody reasonably clear on this intermittent stream criteria?

MR. FLORENCE: Fairly.

MR. DICKERSON: O.K. Then, now, the thrust of your question, you're trying to get to the point is --

MR. OEHLER: The thrust of my question was --

MR. DICKERSON: -- what is the effect of infiltration of stream water into the ground.

THE WITNESS: From our analysis of

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the present flow over a five-week period of Brown Brook, the quality of the effluent is better than the present stream. Therefore, it should improve the ground water if the recharge is from Brown Brook.

Q. I'm not sure of your answer. I don't know how to pursue it.

MR. DICKERSON: I hate to paraphrase it, but I am trying to clarify it and help you on this. Mr. McPhee's testimony is that the effluent would have a better character than the water presently in Brown Brook and his conclusion is, therefore, that if the recharge of effluent into the ground occurred, it would have a better result than recharge of the present Brown Brook water. Is that-- is that clear now?

MR. OEHLER: O.K.

Q. You are adding chemicals to the treated water, correct, in the sewerage treatment process?

A. The only chemical being added or chemicals, there are two chemicals to be added to the water. One would be aluminum sulphate which is highly insoluble and the other would be chlorine which would be stripped out before it enters Brown Brook.

Q. The aluminum sulphate, what happens to that?

A. Aluminum sulphates disassociate into a point of forming aluminum hydroxide or if there are phosphates present, aluminum phosphate complex -- an aluminum phosphate complex which again is insoluble. The sulphate radical remains in the water tied up with your calcium and so on.

Q. Will all of that be colloidal since it's insoluble?

A. No, the sulphates would remain soluble in the water.

Q. Have there been any long-term studies of the effect of drinking sulphates?

A. If they get high enough, they're a very good laxative. But you have to get up into the realm of, I would guess, 500 parts per million and we will not -- we will be talking in the order of magnitude of perhaps 40 to 50 parts per million. The present -- the present water coming out of the well site in Questionmark Brook are 37 milligrams or parts per million at present.

Q. Since these are insoluble, it means they will --

A. These are soluble, not insoluble, I'm sorry.

Did I say insoluble? They are soluble.

Q. You said insoluble.

A. They are soluble.

Q. What causes them to precipitate?

A. No, the sulphates will remain soluble. The aluminum will come out as a complex either as an aluminum hydroxide or as an aluminumphosphate complex which is insoluble. These are the ways we remove the phosphates.

Q. I understand you're binding them with a --

A. Chemically combining them.

Q. ~~Chemically combining them, and they precipitate and they precipitate from the point of discharge?~~

A. Oh, no, they precipitate in the treatment process and are removed as sludges.

Q. All of them?

A. All of them. We are double-filtering.

Q. The -- I forgot --

A. I say all of them, we're talking phosphates.

Q. Yes.

A. Or hydroxides.

Q. For the moment.

A. Those would be removed. There should be no suspended material present in the effluent of the

plant with double filtration. It will be of the same quality as the water now coming out of the Amawalk Reservoir supply as far as suspended solids is concerned.

Q. That may not be the best water supply as you've testified, sir.

A. Well, I'm talking suspended solids which would be precipitated, colloids.

Q. I hope we don't have any of the brown crawly living things in that water as we have in the Croton Reservoir?

A. The Croton, I agree with you a hundred percent on the Croton, even with John present over there.

Q. Well, the point I was trying to get at is that the sulphur is still soluble.

A. Sulphates.

Q. Sulphates are still soluble, they will go downstream, they will accumulate?

A. You asked me the question whether as chemicals-- whether we are adding chemicals. I said we're adding chemicals as a chemical and aluminum sulphate in the form of alum --

Q. Yes.

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A. -- which would have sulphates tied to it.

Q. But the sulphates do go downstream?

A. They have to go downstream because after the dis-
association --

Q. They will accumulate, they can accumulate?

A. No.

Q. They will not precipitate at all?

A. No.

Q. Like turbulence in the stream?

A. I know of nothing except ion exchange to take
sulphates out of the water.

Q. I don't care what takes them out, they will not
concentrate?

A. They won't concentrate, no.

Q. They won't go through the ground?

A. Oh, by travel through the ground, if you had a
stagnant condition such as a perched -- I mean a
perched, a trapped water.

Q. With evaporation?

A. Then they would, they would concentrate in it,
surely.

Q. With evaporation, with evaporation.

A. You look at your salty lakes, one of the reasons

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for that, -- that is one of the reasons for the condition in your Great Salt Lake, your Dead Sea, what-have-you.

Q. I've never seen a sewer facility report before and I don't know what is legally required. I have some concerns and perhaps I can ask and maybe you can say that it's not legally required. Maybe you can say that there's things you've done about these things. Possibility of breakdown, you talked about process breakdown yesterday, possibility of mechanical breakdown.

A. Those are the two areas you have to be concerned about.

Q. Have you done any projection at all on either case, the processing and/or?

A. As I indicated, the plant is being designed in three modules, three equal modules. Initially, two of the modules will be fully equipped and again the state requirement of DEC on small plants, and it is not an ironbound requirement, but one that they like to enforce, is that you duplicate equipment so if you do have a mechanical breakdown at least half of the plant remains in operation mechanically.

Q. Is that half sufficient to treat the amount of sewerage?

A. At a reduced efficiency, measure of reduced efficiency a few percentage points.

Q. And the probability that both sections or halves will fail is --

A. Slim.

Q. Slim. Care to give an estimate?

A. I have never known it to happen mechanically.

In the -- in the biological end of this process, the only mechanical equipment that is required are air diffusers in the tank. These are fixed -- not fixed, they are swing diffusers that can be raised out of the tank for cleaning and replacement so there's no mechanical wear to anticipate. Mechanical wear takes place in the blowers that feeds the air to these diffusers.

Q. M-m h-m-m.

A. Here we have met the state's requirements of adding an additional blower equal to or greater than any one of the other blowers. If three blowers were required, four blowers are installed. In this case, I think two blowers are required and three blowers

are installed. Therefore, a mechanical breakdown of one of the blowers, you have 50 percent backup so you immediately pick it up.

Q. M-m h-m-m.

A. To provide the guarantee that the power outage which is possible in this area and sustained for a period of time, not a matter of minutes, a diesel driven generator capable of operating these blowers is provided.

Q. What's the cut-over rate? Is it significant, the cut-over rate of the diesel from power failure to diesel start?

A. In this case it's a manual start and the plant is attended 24 hours a day.

Q. That brings up another question. What about operator mistakes? We're all human; we all make mistakes. What if an operator makes a mistake?

A. Well, an operator making a mistake which would create a problem as far as a long period, I can't-- I can't see it.

Q. Do you have any examples?

A. An operator opening and closing a valve by mistake, this is always the possibility of an

operator's mistake, and like to open and close a valve in this plant he would immediately have sewage flowing out over the rims of the plant and he would know it immediately.

Q. It still would flow out before he would know it?

A. That is so, it flows by gravity through the plant. Now you shut a valve somewhere downstream and it's going to seek its own level and go some place else.

Q. The plant was designed to meet the 602,000 gallons?

A. 702 in this case.

Q. 702?

A. Because it has the --

Q. Oh, excuse me, 702. Yet the peak, you've indicated, is 30 percent above the 602?

A. No, that's the maximum day.

Q. Can you handle the maximum day?

A. Oh, yes, we can handle peaks of two and a half times the average, the annual average, without reduction in the process.

Q. For what period of time? Suppose there was a sustained peak?

A. Of 130 percent?

Q. Yes.

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A. No problem.

Q. For how long?

A. As long as it can go on, as long as we can adjust to it as it comes on.

Q. Does the --

A. Again a biological process is a flexible process.

There are two parameters just like getting into --

I dislike getting into technical discussions that consume time. There are two parameters that are essential: One is time and one is the biological mass to the food ratio. If I decrease the time and increase the biological mass, I accomplish the same removals. If I increase the time and decrease the biological mass, I increase the same within limits.

Q. Within limits?

A. Within limits, so within the limits of 30 percent I would say, within the limits of a hundred and 250 percent we can adjust. We have sufficient air capacity to meet these increased biological masses, demands.

Q. What if one of these hundred-year storms occurs when you're --

A. Would have no effect, no effect on the treatment

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plant.

Q. Are any of these tanks open?

A. Well, a 100-year storm, what's a 100-year storm, six inches of rain in eight hours? That's no problem.

MR. FLORENCE: It's more than that.

THE WITNESS: A 100-year? You get eight inches.

MR. FLORENCE: It's only a 10-year storm, one in 10 years.

THE WITNESS: I think the storm that-- the storm that passed through Westchester County which was classified in this area had an eight-inch rainfall in 10 hours or eight hours and is classified up in one in a thousand. The same with the kind of storm that passed through -- oh, Paterson, New Jersey again, a way up in the high frequency and every time you have a storm you change your frequency curve.

MR. DICKERSON: Excuse me.

MR. OEHLER: I have just one more.

MR. DICKERSON: Because I would like to take a break at quarter of if we can.

MR. OEHLER: I'm almost finished.

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THE WITNESS: But rainfall on the tanks

if of no significance.

Q. We can come back and see you if any problem occurs?

A. I presume you will. That's the reason I carry insurance for protection of omissions and errors.

Q. I'm not sure this question is going to make sense but let me try it anyway: I'm worried about -- this is some of my concerns about what's left unsaid, all right? You've made an analysis of the stream flow, you've made analysis of what happens when the sewerage comes in and what's discharged from it, but that's not the way it's going to be 10 years hence.

You're going to have parking lots around active buildings, you're going to have parking lots in front of the condominiums. You've already taken down large pieces of trees, a large number of trees, and opened it up for golf courses. There's going to be a great deal more -- a great deal more runoff it seems to me.

A. That will be taken care of this afternoon. That's Leonard Bibbo's discipline as far as this project is concerned.

Q. Does that have any effect that you know of on either the sewerage treatment --

A. Not on the sewerage treatment.

Q. How about the water supply?

A. Not on the water supply.

MR. OEHLER: Thank you.

MR. DICKERSON: Ladies and gentlemen, I think we're about ready for lunch. Can I ask if-- is it possible for a 45-minute lunch? Let's try and get back around 1:30.

(Whereupon, at 12:45 p.m. a luncheon recess was taken until 1:30 p.m.)

AFTERNOON SESSION

MR. DICKERSON: O.K. Ladies and gentlemen, I think we'll pick up where we left off. Mr. Oehler, you were cross-examining Mr. McPhee. Do you have any further questions?

MR. OEHLER: I have one more.

(The witness, Walter McPhee, returned to the witness stand.)

BY MR. OEHLER:

Q. You have proposed a hypothetical situation. Now, maybe it is a proposed situation that you can relate to and tell me whether or not it's ever existed in the past or any other place that you know of.

MR. DICKERSON: Could you speak up just a little bit so we can all hear?

MR. OEHLER: Sure.

Q. (Cont'd.) There is a sizable number of homes in the area. Assume that there are a lot of homes in the area, three or four hundred, for instance, and assume that they are all serviced by deep water wells and before you indicated that there's no way of proving a deep water well failure, is that right?

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There's no way of proving the source?

A. If it was an individual failure.

Q. If it was an individual failure.

A. It would be very difficult.

Q. O.K. Suppose there were somewhat of a massive failure. I don't know what "massive" means. Maybe it's 10 percent, maybe it's 50 percent, maybe it's 100 percent. Is there any way of proving that?

A. Proving, you mean the cause?

Q. That there is some relationship between cause --

A. Cause of the failure?

Q. Yes, you've indicated that climatic was one and mining was another.

A. Right. Well, your rock wells and most wells in this area, as I say, I know of no gravel wells in this area. Most of them are rock wells. They receive their water from the surface like the aquifer does. You have to dewater the aquifer completely before you really would affect the water stored in the crevices, interstices of the rock, where you're drawing your water from. Where the water in the rock comes from is the unknown. Where the recharge is, is unknown. It could occur, say, in a 200-foot

well, you might have a crevice sufficient to pass water from one drainage basin to another, could be possible, so in this case if you had a series of wells that failed somewhere adjacent to the development here, or in the aquifer you were withdrawing the water from, but the aquifer wells that were developed by Heritage were still pumping at a constant rate, than you could not prove that the withdrawal of the water from the aquifer affected these wells. It would have to be something else.

Q. If they were pumping at a reduced rate?

A. No, they would have to be dry.

Q. Would have to be dry?

A. Dry, because what it means is that you're depleting all of the water stored above the rock level that is recharging the crevices in the rock.

Q. O.K. Has there ever been a situation where a survey or base line was established of neighboring wells with some kind of threshold setup, say, such that if some percentage of the wells failed that there would be payment made to the homeowners?

A. Not to my knowledge.

Q. Nothing like that has ever been done before?

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A. The only people that get into surveys similar to that but wouldn't get into the setting of rules and regulations for damages would be the U.S. Geological Survey and they are the ones responsible for the management of the water on Long Island and certain parts of Jersey where you have a tremendous underground supply of water.

Q. But they're not responsible in this area? There's no one in this area?

A. We inquired from the U.S. Geological Survey whether they had any reports as far as the number of wells, the depth of the wells, the history of failures and so on. We -- work we've done in New York State, we have frequently encountered such reports, Sullivan County being one. Sullivan County has a very extensive report from the U.S. Geological Survey which gives you a tremendous background on rock wells and gravel wells and their history of failures and so forth. None for this area. They have none. Mr. Dineen, who was here this morning, of the County Water Agency, he may have something. I mentioned it to him the other day and he was going to check to see whether they did have anything.

Q. That information is available at the local well driller's, your friendly well driller?

A. Yes, but then you have to go around and inquire from each one and how far back this history goes. is a question. They keep a log.

Q. Yes.

A. And this is where the U.S. -- what the U.S. Geological Survey does. They go to the well drillers, accumulate all this data and then if they have certain other history from the local Health Department and so forth of failures, they work it up and compile it into a report.

Q. But no attempt was made by you to do that?

A. No.

MR. OEHLER: All right, I'm finished.

MR. DICKERSON: Mr. Blasi, did you wish to interrupt this cross-examination?

MR. BLASI: Mr. Dickerson, I respectfully request that we be permitted to take one witness out of order, Mr. Sullivan of the Lauman Company. He's been around for two days. I had to call him back and he has some other things that are very urgent for him in the next couple of days. I

don't know how long his testimony might be, but I respectfully request that we take him out of order and then if somebody wants to go back on the questioning of Mr. McPhee, why, we can do that.

MR. DICKERSON: Let me just check to see who will be -- Mrs. Saia, will you have any questions of Mr. McPhee?

MRS. SAIA: I think Dr. Port would. I think it could cover --

MR. DICKERSON: Well, I know Dr. Port has.

MRS. SAIA: I think our interests would be similar.

MR. DICKERSON: O.K. So he can cover your interests.

MRS. SAIA: Yes.

MR. DICKERSON: Dr. Port, you will have some questions of Mr. McPhee?

DR. PORT: I will.

MR. DICKERSON: New York City? Westchester County? Under any one of three hats?

MR. ALEXANDER: No further questions, sir.

MR. DICKERSON: O.K. Mrs. Bahret?

Mr. Mally? Mrs. Daly?

MRS. DALY: Yes.

MR. DICKERSON: Miss Eustace? What I'm trying to find out is --

MRS. DALY: Oh, yes, I do.

MR. DICKERSON: We will have questions. I'll excuse Mr. McPhee briefly, we will bring Mr. Sullivan in and then recall Mr. McPhee to get Mr. Sullivan out of town. No implication is intended.

Mr. McPhee, you're excused for the time being. You will be recalled for further cross-examination.

MR. McPHEE: Thank you.

(The witness, Walter McPhee, was excused.)

THOMAS SULLIVAN,
called as a witness for and in behalf of the applicant, having been first duly sworn, was examined and testified as follows:

MR. DICKERSON: Would you please be seated, state your name, address and affiliation.

THE WITNESS: My name is Thomas

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Sullivan. I live in East Setauket, Long Island, New York. I'm Vice-President of the Lauman Company.

DIRECT EXAMINATION
BY MR. BLASI:

Q. All right, Mr. Sullivan, what is the business of the Lauman Company?

A. The Lauman Company is a water supply contractor engaged mainly in the drilling of gravel-packed water supply wells for municipalities and industry.

Q. What is the Lauman Laboratories, Inc.?

A. Lauman Laboratories, Inc. is a wholly owned subsidiary of the Lauman Company.

Q. Is it an approved laboratory of the State of New York?

A. Yes, it is a New York State approved lab.

Q. And does Lauman Laboratories work in conjunction with the Lauman Company with reference to wells?

A. Yeah, it -- in analysis of the wells, the water from the wells we drill, yes.

Q. Now, Mr. Sullivan, was your company requested to make certain tests of wells for the Heritage Hills of Westchester?

A. Yes, sir.

Q. Mr. Sullivan, I show you the Exhibit 5 in evidence which is a water supply report signed by Mr. Walter McPhee, March 1973. Is that the last --

MR. McGANN: That's the only one.

MR. DICKERSON: That's it.

Q. (Cont'd.) -- dated March 1973, and I call your attention to the page dated 12/19/72 entitled "Lauman Company, Incorporated Pumping Test, Well No. 1," and I ask you whether this is a pumping test report of Well No. 1 for Heritage Hills of Westchester?

A. Yes, sir, it is.

Q. Now, in order to save time, I show you the same exhibit and ask you if you would go through the subsequent pages and identify them and tell me whether likewise these were made by the Lauman Company. Now, Mr. Sullivan, I call to your attention that there are several pages, so just take each one as you go along. This is the first one you've testified to.

A. Yes, sir.

Q. Now, proceed, please.

A. The -- this is the -- still part of the tests

for Well No. 1.

MR. DICKERSON: Could you speak up a little bit, please, so everyone can hear?

THE WITNESS: Yes. The second page is the remainder of the test for Well No. 1 dated 12/20/72. The third page is part of the test performed on Well No. 1. The fourth page is a log of Well No. 2. Well, this was prepared by McPhee by or with -- from information we supplied.

Q. Now, since you turned to that, is that also true of the description --

A. Yes.

Q. -- as to Well No. 1 which was prepared by Mr. McPhee on the data that you supplied, is that correct?

A. That's correct.

Q. All right, go ahead.

A. This page is a record of the test on -- of Well No. 2 dated 12/19/72. This page is the test also of Well No. 2, same date. This page is data concerning that test on Well No. 2 performed at the same time as Well No. 1. This page is a record of the log for Well No. 3.

Q. Made by Mr. McPhee?

A. Made by Mr. McPhee from information we supplied him. This page dated 12/19/72 is a record of the test of Well No. 3 as is this following page.

Q. That's the second page on Well No. 3?

A. Second page, right.

Q. Now --

A. And this page is the remainder of the tests performed on Well No. 3.

Q. Now, would you go to this last page.

A. Yes, this is a chemical analysis of the -- of a sample taken after five hours of testing, pumping Well No. 3. The sample was collected on November 1st, 1972. The analysis was performed by the Lauman Laboratories, Inc.

Q. Now, Mr. Sullivan, all of these pages reflect the records kept by the Lauman Company and by the Lauman Laboratories, Inc. in the regular course of the business conducted by these companies?

A. Yes, sir.

MR. BLASI: Mr. Examiner, this morning the question came up about the -- those portions of Mr. McPhee's report, the water supply

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report of March '73, which were not prepared by him.

Mr. Sullivan has now identified and testified to the pumping tests as you have heard described and which are a part of this exhibit, so I now ask that the record accept into evidence the entire report with the information and testimony as supplied by Mr. Sullivan, that is, the detail.

MR. FLORENCE: May I inquire, Mr. Dickerson?

VOIR DIRE EXAMINATION
BY MR. FLORENCE:

Q. Mr. Sullivan, is there a notation certifying on these papers the results of these gallons per minute and the pumping level and the time?

A. How do you mean by "certification?"

Q. Don't you have to certify that? Doesn't somebody certify these results?

A. No, not normally.

Q. At least swear that they're true?

A. Not normally.

Q. They are not certified?

A. No.

Q. When you -- did you physically take these yourself?

A. No, I did not.

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Q. Is your recollection of the events and the papers that you see here based on what papers came across your desk or what information you have solely as an officer in the company?

A. No, I -- I was at the site during -- during the time the test was run, not the entire time but part of the time.

Q. You attended some of the time?

A. Right.

Q. And you have first-hand information about that?

A. Yes, sir.

Q. But other than that, none?

A. Well, no except that in the normal course of business when we are running these tests we keep records as shown here.

MR. FLORENCE: I'm not certain -- I will object to the results of any pumping tests as uncertified and, therefore, not admissible for the purpose of proof of the truth of the records.

However, I don't object to them as business records to the extent that business records were kept.

MR. BLASI: I can clear it up in one minute.

DIRECT EXAMINATION (Continued)
BY MR. BLASI:

Q. Mr. Sullivan, this information is supplied by your employee or employees under your supervision, is that correct?

A. Yes, sir, yes, sir.

Q. And at the end of each day, you receive the logs relating to this operation?

A. Yes, sir.

Q. Now, Mr. Sullivan, when these records are kept at the end of each day, and they are part of the records of your business, is that right?

A. Yes, sir.

Q. And do you verify that this is an actual record that was in your office and kept in the regular course of your business?

A. Yes, sir, I do.

MR. BLASI: I don't see any problem about that. I offer it in evidence for the exact purpose of showing these pumping tests and whatever the Lauman Company did. If Mr. -- if Mr. Florence wishes to take the position he has, I don't think it has any basis or any merit in this type of pro-

ceeding and I offer it in evidence in toto for all purposes.

MR. FLORENCE: I stand on my original objection.

MR. DICKERSON: O.K. Your objection is overruled. The documents are received for what they're worth.

MR. VAZZANA: Mr. Hearing Officer --

MR. BLASI: Just a minute, I'm not finished yet.

MR. DICKERSON: They were already received.

MR. VAZZANA: They were already received?

MR. DICKERSON: There were certain objections to certain portions of it. The objection was restated as to certain portions of it.

MR. FLORENCE: Mr. Dickerson, Mr. Vazzana has something to say, I don't wish to bind him to my objection because my objection is to the truthfulness or accuracy of the reports. If Mr. Vazzana has a further objection, he may want to put it on the record.

MR. VAZZANA: Are you offering this--
are you offering --

MR. BLASI: I am offering the balance
of Exhibit 5 because this morning there was an ob-
jection made.

MR. VAZZANA: That's all I want to
know.

MR. BLASI: So now, if I understand
the record completely, all of Exhibit 5 is fully
admitted into evidence.

MR. VAZZANA: Yes.

MR. FLORENCE: Quote, "for what it's
worth."

MR. BLASI: Well, any exhibit is re-
ceived for what it's worth, received into evidence.
The weight, the truth or the untruth is for Mr.
Dickerson to decide.

MR. FLORENCE: Thank you.

MR. BLASI: All right?

MR. FLORENCE: Yeah.

MR. BLASI: Even your testimony.

MR. DICKERSON: Would you like to
call Mr. Florence as a witness?

MR. BLASI: No.

MR. FLORENCE: He wouldn't dare.

MR. DICKERSON: O.K. let's proceed,

gentlemen.

MR. BLASI: I have a few more questions, just a few more questions.

BY MR. BLASI:

Q. Mr. Sullivan, I call your attention to Exhibit 4. Would you mind stepping up here a minute with Mr. Dickerson's permission?

A. I have your permission?

MR. DICKERSON: Just speak loud enough to get it in the record and so that everybody can hear it.

Q. Now, in order to clarify for this hearing the location of these wells, would you state what is the number and the correct number with reference to those three wells as they relate to your report?

A. Well, Well No. 1 is correctly labeled as it is labeled here. Well No. 2 is incorrectly labeled and Well No. 2 is this one which is labeled No. 3. Well No. 3 is the one that is labeled No. 2.

MR. FLORENCE: We never get through

the errors in the exhibits around here.

Q. It isn't too material.

A. Well, the --

MR. DICKERSON: Let the record show that the references to the well numbers in the water supply report, Exhibit No. 5 and the correlations to notations on Exhibit No. 4 are as follows: No. 1 on Exhibit 4 is No. 1 on Exhibit 5. No. 3 on Exhibit 4 is No. 2 in Exhibit 5 and the well indicated as No. 2 on Exhibit 4 is the well indicated-- you got a hooker for me?

THE WITNESS: Yes, sir. I think in the report, the information concerning the wells is correct.

MR. BLASI: No, he's not questioning that. It's just that the locations were confused.

On that exhibit.

MR. DICKERSON: No, Well No. 2 as indicated on Exhibit 4 is the one reported in the exhibit you've just examined as Well No. 3.

THE WITNESS: That's correct.

MR. DICKERSON: O.K. That's the correlation I want to establish on the record.

MR. BLASI: O.K. All right, now, you may inquire.

MR. DICKERSON: You have no further questions of this witness?

MR. BLASI: No further questions.

CROSS-EXAMINATION
BY MR. FLORENCE:

Q. Did you ever take any tests in this area, Mr. Sullivan, at other times of the year than the wet season?

MR. BLASI: I object to that question.

It assumes a wet season. Let's have a definition.

Q. Well, did you take anything in July or August, late July or early August, early September or any time during the month of August?

A. We've started drilling in the area in August or exploratory drillings.

Q. All right. During those exploratory drillings in the month of August, in fact, you found totally unsatisfactory results for the purposes for which you were sent, is that correct?

A. No, sir.

Q. Did you find and drill either Well 1, 2 or 3 -- 1, 3 or 2, however you number them and identify them in

August?

A. We probably established formation then. I'd have to check the records to be certain.

Q. Did you bring your records with you?

A. Yes, I did.

Q. Would you refresh your recollection as if -- with whatever records you would find appropriate, take them out and I'll wait for you.

MR. DICKERSON: Might as well use this opportunity for relaxation if you wish to. We'll go off the record for a minute or two.

(Discussion off the record.)

MR. BLASI: Mr. Dickerson, Mr. Sullivan says he's ready.

MR. DICKERSON: O.K. Ladies and gentlemen, we'll get back on the record. Mr. Florence, you can continue.

BY MR. FLORENCE:

Q. I forgot the last question. Do you remember?

A. You asked me if we started drilling --

Q. In the dry season.

MR. DICKERSON: In August.

A. Well, if I can narrate a little bit, we started

work in the -- oh, around the first week in August.

The procedure with this type of work is to do exploratory drilling by auger drilling for the most part. Now, the engineer had picked certain sites that he wanted, if possible, to develop a water supply. We did probe drilling, auger drillings in these areas and found no formation or rock being very shallow and so on, so after finding that in this first choice of sites, we moved to this site down here on Route 100, I guess it is.

MR. DICKERSON: This is essentially the area outlined in green.

Q. O.K. May I stop you -- may I stop you at that point.

A. Yes.

Q. And clarify one or two points in what you've already said. You're familiar with who the applicant is, Mr. Paparazzo, Mr. McGann and their various corporations?

A. Yes.

Q. Were they the people who hired you?

A. Yes.

Q. All right. And you worked at that time not with

Mr. McPhee but with some other personnel, is that correct?

A. That's correct.

Q. Who were they that you were associated with?

A. The Rotfeld Associates.

Q. Rotfeld, the predecessor, or presumably, to Mr. McPhee. Now, when you came on the job, as I understand your testimony, they told you where they wanted you to look for water?

A. Yes.

Q. All right. Now, your organization is an organization in New York or Connecticut?

A. New York.

Q. It's a New York organization?

A. Yeah, we're a New York corporation.

Q. I don't mean, you know, domestic as against foreign, but where is your area of activity?

A. Northeast.

Q. In the northeast, and did you hire -- you have your own drilling equipment or do you hire drillers from -- from people that you know who have this equipment.

A. No, we have our own equipment.

Q. All right, and your employees do the drilling?

A. Yes.

Q. And you came to this area and were directed in certain locations to do certain auger drillings?

A. Yes.

Q. Well, would you call them --

A. No, they're borings.

Q. Borings, all right. And how far down were you making these borings at the time or did you just go down until you hit rock or what?

A. Pretty much until we hit rock and the depth of the borings would vary depending upon where the rock was.

Q. Where were you first told to bore for the purpose of getting water?

A. I'd have to do quite a study of this to get into where we did our first borings. I think --

Q. Could I refresh your recollection? Did you do it down near Warren Street and Route 202?

A. I believe probably it was.

Q. In that meadow down there. As a matter of fact, you started closest to the corner in August and began working your way -- here's Warren Street, all

right?

A. M-m h-m-m. I believe it was further up.

Q. And 202 is right here, and here is the intersection of Route 100 and here is the diner where you get the coffee (indicating).

A. Yes.

Q. All right. Borings started right along in here, worked their way up here (indicating)?

A. That may be; I don't know.

Q. Well, you weren't on the job, that's right, you weren't on the job every day?

A. No, no.

Q. All right. Well, where did you go after that?

A. What, after the --

Q. After you made your exploratory borings in this area that I'll call the area at the intersection of Warren Street and Route 202?

A. I believe we moved down to the site where the wells are.

Q. And then you moved -- did you go around behind what is -- where we have presently located -- where we are presently located in the Town House here and do these test borings or do some test borings back in

here?

A. It could be that we had, yes.

Q. And then you went over to this area (indicating)?

A. M-m h-m-m.

Q. Did you ever do any drilling or test borings on property other than that owned by the people who had hired you?

A. Not to my knowledge, no.

Q. Would it refresh your recollection if I asked you, did you come down right down Route 100 and do some borings on property that I call the Billingsley property?

A. Oh, yes, yes, we did, yes.

Q. Right at the corner of or near the property line of Sun Enterprises, near that Reservoir?

A. Yes, we did, yes.

MR. FLORENCE: All right.

MR. DICKERSON: For the record, would you give us approximate distances from the intersection of 202 and --

MR. FLORENCE: Well, back of the fire house, let's put it that way.

MR. DICKERSON: O.K.

MR. FLORENCE: As a general proposition, somewhat south of it and to the east but not more than 700 feet.

THE WITNESS: O.K.

MR. DICKERSON: Thank you.

Q. O.K. And those test borings were borings that were not vertical but were angled looking for that aquifer that was part of the -- this other reservoir you observed?

A. We don't do any directional drilling.

Q. You don't?

A. No, sir.

MR. BLASI: I was going to object to the form of your question but I figured he could handle it.

MR. DICKERSON: Thank you.

MR. FLORENCE: Did you object to the subject?

MR. BLASI: No, I object to the manner, the method of asking the question, the content of the question, the format of the question.

MR. FLORENCE: Well, let me address myself to the form of the question. I think the

question is not limited to anything that's covered on direct examination, number one, and number two, if I say it in poor form I stand to be corrected. As to the subject matter, I think if it's relevant I ought to be permitted --

MR. BLASI: Well, you're going outside the scope of the direct and I haven't objected yet, and then I'm going to object, however, if you do go too far out.

MR. FLORENCE: Then we'll be at loggerheads, gentlemen.

MR. DICKERSON: All right, gentlemen, let's get back to the question and make some progress.

Q. All right. How many aquifers did you work in or how many did you discover, let me ask it that way, separate aquifers?

A. I would say basically two that, you know, we would -- we would say were separated aquifers, yes.

Q. All right. Now, where were they?

A. Well, the one where the test wells are located.

Q. That would be this area surrounded by the green pen marking?

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A. Right.

Q. And the other one?

A. Up in where we have a test well at Warren Street.

Q. And that would be in the area -- are you familiar with the name of this brook as Brown Brook, would that identify it?

A. The name doesn't mean anything to me, no.

Q. All right. The valley that's in this area where you have your present well designation --

A. M-m h-m-m.

Q. -- has a supply of surface water, does it, to get to the aquifer, or do you know? How does that -- how do you get water into that aquifer; where does it come from?

A. That comes from precipitation.

Q. And does that percolate into the soil?

A. It percolates into the soil, yes.

Q. And is that the same -- would that be the same answer for the question of the area where this Brown Brook is and where you first did your test borings?

A. Yeah.

Q. All right, and would you compare the size of the drainage area into which the aquifer would receive

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water where your present wells are with where you started your drilling?

A. I have done no calculations on drainage area.

Q. You don't know?

A. I --

Q. Is one larger?

A. I drill wells. That's my business.

Q. Do you have an observation as to whether one was larger than the other?

A. No.

Q. You wouldn't remember?

A. No, we did no calculations, I should say.

Q. All right. Now, how far down did you drill or do you have anything, any logs that show how far down you drilled in these first test borings that you took at the intersection of Warren and Route 202?

A. I probably do.

MR. BLASI: I must -- Mr. Examiner, we are now going outside the area of this application and the question and the hearing relates to this application. If he were right adjacent to it, there are some of the questions that might be related to some of the other issues as you announced

them yesterday and I could understand it, but I think he's now going far afield and I now object to the question.

MR. DICKERSON: You're going to confine all of your water supplies in the area shown in green on Exhibit 4 without making further application?

MR. BLASI: Well, we're bound by the extent of our application and the water report which is the basis of our application and that's the area that's located there.

MR. FLORENCE: I didn't understand your answer to the Examiner's question.

MR. DICKERSON: You made an application to take water.

MR. BLASI: Yes, sir.

MR. DICKERSON: You're taking water from three test wells.

MR. BLASI: Yes, sir.

MR. DICKERSON: You propose to develop a water supply, the exact location of which is still open.

MR. FLORENCE: More than that, we

would also say in the report they may need more water.

MR. BLASI: I would say I don't think the exact location is open.

MR. DICKERSON: O.K.

MR. BLASI: I think the exact location is what's in the report. Now, if he wants to -- if he wants to go into the areas that are within the report, they would be relevant.

MR. FLORENCE: I don't think I should be confined to that.

MR. DICKERSON: I have a question on the second well site since it was mentioned on direct and I'm going to see if Mr. Florence asks it. I'm going to overrule your objection and let the witness answer the question.

A. Well, the initial borings that we did for the most part we didn't get down much over 15 feet, 15 maybe to 25 feet.

Q. What water sources did you -- what water calculations did you make and receive there?

A. Well, we established the facts of the formations that we found there were not suitable for develop-

ment of any water supply.

Q. Did you pump --

A. Most of them we did not, no.

Q. Well, you did pump some then, didn't you?

A. We put -- we tried to put two-inch point I think in one of them and tried pumping and it didn't pump too -- it pumped water but not at any great amount.

Q. How many borings, do you have a numerical sequence of all the borings you did on this job?

A. No, I don't.

Q. How many all told did you do or do you know?

A. Well, I -- yes, I know we did numerous borings. I'd say better than 50.

Q. And of those 50 or better than 50, did you find water in all of them or only some of them or --

A. We found formation, suitable water bearing formation in only some of them.

Q. And did you take any other tests and pump water on any of the borings in the valley that I say is by Warren Street and 202? I'm talking about in here, serviced by the Brown Brook?

A. Yes, we ran a pumping test on one test well.

Q. I know, but were there any other is what I'm asking you?

A. To my knowledge, no.

Q. Your records indicate that there are no others?

A. So far as I can see the records, yes.

Q. Were any test borings taken on the west side of the property and when I say the "west side of the property," I mean property on the west side of Warren Street. I see an area here and I would even ask you further than that, more specifically, on the valley or in on any side of the western side of the ridge, the second ridge, the most western ridge?

A. I don't --

Q. If you don't understand my question and from the look on your face you don't know what I'm talking about --

MR. DICKERSON: Why don't you refer to the map?

Q. (Cont'd.) Here's a ridge here and here's a ridge here on this Exhibit No. 23, the U.S. Geodetic. Did you do any test borings on the western side of this ridge or, more simply stated, on the west side of Warren Street in any of this area over here?

A. We may have. I don't -- I don't have a record of it. I didn't study our records to -- I studied our records as far as our pumping tests were concerned, not as far as aug borings we did do. Conceivably we may have, I don't know.

Q. In any event, this is the first place you found and you stopped when you found sufficient water, is that correct?

MR. BLASI: Now, I object to the form of the question.

MR. FLORENCE: This is the --

MR. DICKERSON: Rephrase the question a little more precisely.

Q. This is the area that I refer to as the area surrounded by green on Exhibit 4, is that the area that you first found to be acceptable?

A. No.

Q. What other areas did you find acceptable?

A. The only -- the first area we found to be acceptable was where the three test wells are right now.

Q. That's what I refer to?

A. Yes.

Q. So then your answer, you misunderstood me.

MR. DICKERSON: For point of clarification generally, we've been marking up several exhibits, Exhibit 23, the area in blue is an approximate boundary of the area that's outlined in green on Exhibit 4.

THE WITNESS: Yeah.

MR. DICKERSON: To indicate the general outline of the aquifer and/or test well site and future well site.

THE WITNESS: All right, that was the first area we found sufficient formation to provide a water supply.

Q. Now, do you know anything, Mr. Sullivan, in relation to the aquifer -- what has been referred to in this hearing as the aquifer, that is, its size.

MR. BLASI: Aquifer.

MR. FLORENCE: I'm not an engineer.

MR. BLASI: Neither am I. I thought you were. Aquifer.

MR. DICKERSON: O.K., gentlemen.

MR. BLASI: Go ahead.

Q. Do you understand what I'm talking about?

A. You got halfway through your question so --

Q. O.K. Do you have any judgment or any understanding as to the size of the area that is used for storing water where you have located Wells No. 1, 2 and 3?

A. Do you mean to the extent of the aquifer?

Q. Yes.

A. No.

Q. Do you do that kind of work?

A. Not generally.

Q. And your work then would be simply limited to either augering or making some other well and then pumping and calculating the results of the pumping?

A. We are contractors. We drill water wells as a -- as our business.

Q. All right. Now, what was your contract in this case; maybe that's the most direct way to ask the question.

A. Simple to do exploration to determine whether there is water bearing formations in the area.

Q. You didn't form a judgment yourself or make a judgment or representation to the people who contracted with you other than what you physically found?

A. Right.

Q. And the location of what you found?

A. Right.

Q. You didn't make a judgment as to the future availability of that water or to the nature of the reserve or the size of the reserve?

A. No.

Q. Or the quantity not seen?

A. No.

Q. O.K. Are you an engineer?

A. No, I'm a contractor.

Q. Did you witness or certify the calculation of the flows which are in Exhibit No. 5?

A. I witnessed -- at the time I was here during the test, yes, I witnessed it.

Q. Would it be fair to say that this is a 60-hour test and you weren't here all 60 hours but you came on occasion during that time?

A. I did, yes.

Q. And what did you observe, say, at Well 1?

A. Observed in what respect? We were pumping the wells.

Q. Yeah.

A. Through an orifice and measuring the rate of

flow from that orifice.

Q. All right. Now, when you were doing that, water was coming out of an orifice, was it not, from your pump?

A. Yes.

Q. What was the size of the orifice, do you remember?

A. No.

Q. Do you have a standard test, standard size orifice?

A. We have a standard charge, yes.

Q. All right. Now, what do you do with that water that comes out of the orifice; what did you do in this case when you were at the site?

A. Well, Well No. 1 I don't remember exactly which direction we were pumping the well.

Q. Was the water going into a container?

A. To a container?

Q. Yes.

A. No, it was being pumped out either -- it was onto the ground or into the brook, one or the other.

Q. Tell me how you were measuring what you determined to be the flow of gallons per minute in Well 1 when you prepared it?

A. From the readings taken from calibrated orifice.

Q. You just have -- you have an orifice that was -- had in it some sort of a measuring device?

A. Well, orifice -- an orifice provides on the end of a discharge pipe a certain length sufficient back pressure to raise water in a tube which measures the height of water in the tube. Then we correlate it through tapes to capacity gallons per minute.

Q. Would it be fair for me to make this summary from what you've just told me: That these readings of 200 gallons per minute, for example, on 12/19/72 on Well No. -- Well No. 1, are readings that are indirect in this respect, that they are calculated, not observed.

A. Well, they're not -- not really indirect because the use of an orifice is a universally accepted means of measuring rate of flow.

Q. Let me ask it another way: I'm not asking and challenging the system, all I'm asking you is, is there a direct measurement system for determining that there were 200 gallons per minut from 7:45 until 8:45 in this particular well that I refer to?

A. Well --

Q. And you've told me, I think, that what you do is you

get essentially a pressure and you transfer whatever pressure reading you get to a table and the table tells you what the flow is; is that a fair thing for me to surmise?

A. That, I -- yes, I guess it would be as far as I can see, as that's concerned, but it is considered a direct reading of flow.

Q. Now, did anybody ask you to do a 120-hour or were you just said or told to just pump it?

A. We were told to run a 60-hour test.

Q. You were told to take a 60-hour test but not a 120?

A. No.

Q. All right. Now, after you had run the 60-hour test was there a removal of whatever the device was that was pumping that particular well and removal of -- did you have a casing down in this -- under the ground?

A. Well, the well itself is a casing.

Q. Yes.

A. On the outside of the well.

Q. You left that where it was?

A. That and the well screen is -- remained in the ground. The -- in two instances we used deep well

turbine pumps to pump two of the wells and the other one we used a suction pump.

Q. Now, do you have a recollection of where the water was discharged after you had these readings or after you took it out of the ground.

A. As I say, in Well No. 1 I don't remember exactly whether it discharged to the pond or to the brook on the other side of the road. I know Well No. 3 was discharged to the pond and Well No. 2 was discharged to the ground which probably eventually ran into the pond.

Q. How close were these to that pond at that time as you best recall it?

A. Well, Well No. 3 was right on the pond and so was well number -- Well, Well No. 1 was on the road that formed the boundary, I guess, of that pond.

Well No. 2 was a fairly good distance from the pond.

Q. Did you -- did your records indicate to you the nature of the terrain between the area where you were drilling and the surface?

A. Yes.

Q. Are they permeable?

A. No, not -- not -- you say permeable, because

there's a relatively thick layer of clay there.

Q. Did you do any exploration beyond the actual places where you drilled of the nature of the ground? Did you explore beyond, for example?

A. No, we did some borings on the -- I'm not certain as far as north-south is concerned here.

Q. With this other map, Exhibit No. --

A. Well, no, this map suffices as long as I can get --

Q. All right.

A. This is north, all right? We did some borings along the north side of 3 but didn't hit -- hit rock at such a depth we wouldn't be able to complete the drilling.

MR. DICKERSON: Would you indicate that with a dashed line?

MR. FLORENCE: On Exhibit No. 4.

MR. DICKERSON: Let's go off the record a second.

(The witness marked the exhibit.)

MR. DICKERSON: Let the record show that the witness has marked with blue marker pen the location of additional borings -- correction,

the approximate location of additional borings on Exhibit No. 4 with blue X's.

Q. Did you supply any other information to Mr. McPhee or to those people who hired you than what is incorporated in this Exhibit No. 5?

A. No.

Q. Now, with respect to the Well No. 2 and Well No. 3, the readings, are they the readings that came directly from the chart or are they corrected readings for any reason or are they modifications for any other particular factor? That's just it, you got a pressure, it -- you transpose that pressure indication to a gallons per minute figure, and that was it?

A. Right.

Q. O.K. Did you take any -- leave any --

MR. DICKERSON: I'm sorry, start all over.

Q. Was there any time lapse of these pumpings of Well No. 1, 2 and 3 to try again to see if you could verify for example, the flow?

A. Not that I remember right now.

Q. Would your records indicate if there were further

tests taken of the -- of the flows at any time after this original 60-hour test?

A. They may possibly.

Q. Certainly if you did it, you'd have a record of it, wouldn't you?

A. Absolutely.

Q. Would you just kindly verify for me, Mr. Sullivan, that fact?

MR. DICKERSON: O.K. Ladies and gentlemen, I think we'll continue.

A. I have no record of any further tests.

Q. Would that indicate to you that there were no further tests then taken?

A. Probably.

Q. With respect to the mechanics of how you did your reporting, Mr. Sullivan, would you tell me, did you turn the results that we see here on your company's -- presumably your company's stationery, in to the engineer you were working with or did you turn it directly in to the people who had hired you and on a particular contract?

A. I think as I remember, they were sent to the engineer.

Q. And who was that?

A. Rotfeld Associates.

Q. Did you supply them with any information, or maybe I asked you this question -- forgive me if I've already asked it -- other than what you have here?

A. No.

Q. Have you been back since December and January of 1970 -- December of '72 and January of '73 to do any further verification of any or do any -- any more test borings in any other locations?

A. No.

Q. Were you given a layout or preliminary layout at -- of this area that is proposed as Heritage Hills when you started to work?

A. Yes.

Q. All right, and were you told or was it indicated on that particular map where to look for water or was it just a verbal; which was it?

A. Well, I remember at the time the engineer marked several spots, says this is where he'd like to try his first test well.

Q. Were you told not to go in any other particular places or did you just simply follow where the

engineer told you to go?

A. Basically where the engineer told us to work.

Q. Who was on the job with you when you were present for the pumping of, say, like Well No. 1?

A. Our foreman?

Q. Yeah.

A. On the job? His name is Becker, Ed Becker.

Q. And who was there besides Mr. Becker and yourself?

A. His helper, Mr. Hillston and our drilling superintendent Fred Lehmann.

MR. DICKERSON: Would you spell it?

THE WITNESS: L-E-H-M-A-N-N.

MR. FLORENCE: I don't think I have any further questions at the minute. I don't know what else to ask you, in fact.

MR. BLASI: No questions from us.

MR. DICKERSON: Mr. Vazzana?

CROSS-EXAMINATION
BY MR. VAZZANA:

Q. I don't know whether these questions may have been asked when I was out of the room but it will only be two questions. Now, who determined the site of the pumping tests?

A. The length?

Q. Who determined?

A. The length of the pumping test?

Q. No, who determined the site where these tests would be made? Were you given an engineering report and told where to --

A. No, the engineer at the time told us where to do our test drilling, yes.

Q. I see. In other words, you relied upon -- did you have an engineering report with you at that time?

A. Not a report, no. We had a site plan and he indicated by marker.

Q. A site plan the way he wanted it?

A. Yes.

MR. VAZZANA: Nothing further.

MR. DICKERSON: Mr. Weber, any questions?

MR. WEBER: I don't.

MR. ALEXANDER: No questions, Mr. Dickerson.

MR. DICKERSON: Mrs. Saia, Dr. Port, do you have any questions of this witness?

DR. PORT: Just a very preliminary

one to make sure I understood correctly.

BY DR. PORT:

Q. Mr. Sullivan, I believe the record when it's typed will indicate that Mr. McPhee said this morning he thought that if anybody knew about the size of the aquifer it would be yourself. Now, if we make that assumption and the record does, in fact, say that, would you tell me whether you have any idea of the size of that aquifer?

A. No, I don't.

Q. Do you have any idea of the volume within the aquifer?

A. No, I don't.

Q. Can you tell us anything about the aquifer other than the test results as shown in the table?

A. Just that it is for this area relatively a prolific one and yields an amount of water which is unusual to find in the Westchester area.

Q. A statement has been entered into the record that this is perhaps the largest well in our area. To your knowledge, is that an accurate statement?

A. What -- defining area now?

Q. Yeah, that was going to be my question to Mr. McPhee

and then you got on the stand ahead of it.

A. I see. Well, we've done work in this area before. We put in a well for the Bedford Golf and Tennis Club a couple of years ago **that** pumped 750 gallons a minute.

Q. O.K. So that you're saying that as far away as Bedford there is one which is larger?

A. Yes.

Q. O.K. Have you done work in the Town of Somers prior to this particular project?

A. No.

Q. O.K. Do you know anything about -- you know, before you disappear on us, O.K.? -- do you know anything about the dam?

A. No, sir.

Q. O.K. Do you know anything about the relocation of the Brown Brook?

A. No, sir.

Q. O.K. Have you had any experience either on the part of a damaged person or as defending someone who is alleged to have caused damage concerning loss of well, allegedly the result of somebody else's well?

A. Personally, no, I haven't had any experience

there.

Q. O.K. And I assume also that you have not had anything to do with the sewage treatment facilities?

A. No, sir.

Q. Nor do you normally have to do with sewage treatment facilities?

A. Well, our company is involved in the construction of sewage treatment facilities.

Q. Are you currently involved in such a thing?

A. With --

Q. In the area of Westchester County?

A. Currently, no, sir.

Q. How recently were you last involved in such a thing?

MR. BLASI: Mr. Examiner, I don't wish to stop Dr. Port, but he said that he knows nothing about the sewage plant.

MR. DICKERSON: I think we can -- if I can interject a question on Dr. Port's behalf --

MR. BLASI: I see.

MR. DICKERSON: You're not working on the sewage plant for this project?

THE WITNESS: No, sir.

MR. DICKERSON: You haven't worked on

the sewage plant for this project?

THE WITNESS: No, sir.

MR. DICKERSON: Do you have something else or do you have something else you are going for?

DR. PORT: I can get that from somebody else.

MR. DICKERSON: Mr. McPhee, I think I can guarantee that Mr. McPhee will be back.

DR. PORT: I can get that from somebody else, from Mr. McGann, incidentally, which you guaranteed me he would be back on the first day.

MR. FLORENCE: I have a question which follows Dr. Port's on this line of questioning.

MR. DICKERSON: Do you have anything else?

DR. PORT: Peace!

MR. DICKERSON: Thank you.

MR. BLASI: May I ask is there anybody else before Mr. Florence? Excuse me, I'm not telling you your job.

MR. DICKERSON: Do you want to hold for a minute or why don't you get the question in?

BY MR. FLORENCE:

Q. The question is very fast and simple. Do you have any opinion or are you aware of where these wells are located, Wells No. 1, 2 and 3, what would occur to any nearby wells in the area; what would occur in the event of sustained drawing on those wells?

A. Well, if -- if there was wells in the same aquifer, you know, in that general location, you know, a gravel well, I'm sure that pumping would have some effect on it. I can't see how it would have any effect on rock wells.

Q. Well, I don't know whether it's a fair way to ask the question, but did you examine whether there was a gravel well at the Stone House which was the property line you were referring to, I believe?

A. Yeah. No, I didn't.

Q. Assume that there is hypothetically for the moment a drawdown would then, of course, affect that gravel well?

A. It might have some effect on it, yes.

Q. And to the south of the area where these wells are, would wells that are gravel wells in the same aquifer to the south of that also possibly be affected?

A. If you mean by being affected by the wells where our present --

Q. 1, 2 and 3.

A. I don't think it would affect any gravel wells to the south, no.

MR. FLORENCE: All right, I haven't any further questions. Thank you, Mr. Sullivan.

MR. DICKERSON: Do you have any further questions of this witness? Mrs. Bahret? Mr. Mally is not here. Mr. Oehler, do you have questions of this witness?

MR. OEHLER: Yes, I do.

BY MR. OEHLER:

Q. I have to go on the experiences of a neighbor who had problems with a well and I can tell you what his problem was and I wonder if you had examined and done all the right steps to certify that these wells were, in fact, pumping water out of the aquifer. They use casings, that is you use casings for a well?

A. Yes, sir.

Q. And they're steel pipes?

A. Yes, sir.

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Q. And they're eight inches in diameter?

A. Yes, sir.

Q. You use three such casings?

A. Yes, sir.

Q. You pull two of them out, correct?

A. I believe we left all three of them in there. I may be wrong but I thought we left them there because I -- to my knowledge, they were left in.

Q. Have you inspected any of the casings for cracks or leaks of surface water?

A. No.

Q. So you don't know whether or not you were pumping all the water out of the aquifer or some of the water from the surface?

A. Well --

Q. Let me point out that I -- you know, I walked the site last night and, in fact, is this not true, that this Well No. 2, I guess it's really No. 3 --

A. No. 3, yeah.

Q. O.K. You were not able to reach with your truck, that in fact you had to take fill and run the fill out into a marsh, put it on at the narrowest neck in the pond, because the pond is an hourglass shape?

A. Right.

Q. And place the well right there on that neck?

A. We did.

Q. You did?

A. Yes.

Q. O.K. And there was a lot of water, standing water, all around that pond, all around that well?

A. M-m h-m-m, but you'll note also that that well flows.

Q. I note that.

A. That if it was surface water coming into it, surface water coming into it through any crack would not cause the well to flow.

Q. I understand, but also understand any surface water would add to the amount of flow of the well. You would have for each aquifer --

A. Well, let me say this: If there was a crack or a hole in the casing that substantial that it would add to the amount of the flow, it would be definitely noticeable by the clay or sand or anything that you might or would be pumping because there would be no screening effect or no way of holding the material itself out to come in with the

water and it would show up in the water as you pumped it.

Q. Did you look at the water?

A. When we were pumping it?

Q. Yes.

A. Absolutely, it was perfectly clear.

Q. Do you know what the temperature was out when you were pumping?

A. I don't think we recorded the temperature but let me see. No, we didn't record the temperature.

Q. Was it below freezing?

A. Hardly.

Q. In January?

A. Hardly.

Q. So then you're saying that this Well No. 3 you've not inspected the casing for, you don't know --

MR. BLASI: When?

MR. OEHLER: It's still in the ground, it has not been pulled out of the ground.

MR. BLASI: When?

A. No, it's still in the ground and as far as making a visual inspection of the casing, no, we haven't done that.

Q. What's the capacity of the pump you had, the suction pump on No. 3?

A. We had a deep well turbine pump, I believe.

Q. No, I think you said suction.

A. No. 2 we had a suction pump.

Q. No. Well, the well labeled 2 on this one really is No. 3 in the report?

A. No. 3 in the report we had a deep well turbine pump on.

Q. May I see the report?

MR. BLASI: It's over there.

MR. DICKERSON: Off the record.

(Discussion off the record.)

MR. DICKERSON: Let's go back on the record and clarify this now?

THE WITNESS: That's a mistake. I have the original test sheet.

Q. What's a mistake, sir?

A. Well, if you're saying that the pump make, you know, it was not a suction pump we had on that well. It was a deep well turbine pump regardless of what that says.

Q. That thing, the exhibit is in error?

A. It's in error in saying that it was a suction pump, yes. The second page of that test sheet indicates it was a Johnson Pump.

Q. Can we receive that into evidence?

MR. DICKERSON: The statement he just made is the second page.

THE WITNESS: The second page has what I'm pointing out.

Q. Oh. O.K. What is the pumping capacity of that pump? That -- let me point out that that's the best well he has. That's the 350 continuous -- no, I just want to know if there's more reserve in that.

MR. DICKERSON: O.K.

Q. Was that pumping at the rate of the pump, you couldn't pump any more water out, the pump couldn't physically pump any more water out?

A. That's probably so with the rate of the pump, yes.

Q. 350?

A. About that, yes.

MR. DICKERSON: Well No. 3 you used an eight-inch deep well turbine pump?

THE WITNESS: Yes.

MR. DICKERSON: Johnson Pump?

THE WITNESS: Johnson Pump.

MR. OEHLER: I have no more questions.

MR. DICKERSON: Thank you. Anybody else have any questions of this witness? Mrs. Daly?

BY MRS. DALY:

Q. How many wells do you have on that parcel of land bordering on Warren and 202?

A. To my knowledge, there's one eight-inch test well installed there.

Q. Test well?

A. Test well.

Q. How deep is it?

A. I have to get the record. That well is 40 feet deep.

Q. Aren't there other wells on that -- I've been told there are other wells there. It was told by Heritage Hills.

A. Excuse me, ma'am.

Q. I was told by Heritage Hills that there are other wells there.

MR. DICKERSON: This is in the vicinity of Warren Street?

MRS. DALY: Warren Street.

MR. DICKERSON: And 202?

MRS. DALY: And 202, yes.

THE WITNESS: The only material we left in place to my knowledge is this one well that I mentioned here.

BY MRS. DALY:

Q. Well, then I was given misinformation because I was told that, I believe, by Mr. Koppelman.

MR. BLASI: I think she's talking about other test wells.

THE WITNESS: We did other test borings in the area.

Q. No, no, I was told that there were other wells that were to be used for specific purposes.

A. Oh, I don't know anything about that.

Q. You're not aware of them?

A. No, ma'am.

Q. And let's see, I have other questions but I don't think they would apply to you. Now, I don't know whether this would have any effect on my well. I'm one of those that has a very shallow well.

MR. DICKERSON: Where do you live, on

Warren?

MRS. DALY: Right, I'm the second property away from the northern portion of their property at Warren and 202. We have a pipe in the ground.

MR. DICKERSON: Just to get things clear, although this is a little bit irregular, your house is the --

MR. FLORENCE: East side to the north --

MR. DICKERSON: North of the applicant's property?

MRS. DALY: North, right.

MR. FLORENCE: Here's Warren Street.

MR. DICKERSON: Can we mark that please, with the black marker pen?

MR. FLORENCE: Right.

MR. DICKERSON: Here.

MR. FLORENCE: I misspoke then.

MR. DICKERSON: Mr. Kipp has a black marker pen there.

MR. FLORENCE: I'll put it in.

MR. DICKERSON: Just put a black mark

at the approximate location of your house.

MR. FLORENCE: I'll put "Daly" in it.

Do you mind?

MR. BLASI: Put what you want.

MR. DICKERSON: No, just put the letter "D."

MR. FLORENCE: Big "D" on Exhibit 4.

MR. DICKERSON: With a black marker pen which will indicate the approximate location of Mrs. Daly's property.

MRS. DALY: Well, my pump house is located just a few feet from the brook and the brook makes a turn there on my property and since my neighbor only has about a -- I'm not sure, 150 or 175 foot frontage so it would not be more than, say, perhaps 200 feet or so that they may have been drilling. I don't know, where is your test --

MR. DICKERSON: Let's -- Mrs. Daly, over here on this Exhibit 4 there are three red circles.

MRS. DALY: No, no, no, I'm speaking of the one down here.

MR. FLORENCE: Down in here (indicating)

MRS. DALY: But I would like to know where they have that.

MR. DICKERSON: The location of the well, can you indicate that?

THE WITNESS: I don't remember exactly but I know it's right near the road, relatively near the road, isn't it?

MRS. DALY: Yes, but is it up north or down south or where?

THE WITNESS: Down south.

Q. You mean in the marshlands, in the wetlands?

A. In the marshlands.

A VOICE: In the wetlands, that's right. Don't you remember seeing the thing going up and down for three days.

MR. FLORENCE: Former wetlands.

MRS. DALY: Yes, they have been partially filled in.

MR. DICKERSON: All right, approximately.

THE WITNESS: 40 feet from either road.

MR. DICKERSON: From Route 202?

THE WITNESS: And 100.

MR. FLORENCE: There's a little knoll
and it's right over there.

BY MRS. DALY:

Q. Well, when you say "test" exactly what do you mean
by that?

A. Test? Test well, Mrs. Daly.

Q. Yeah.

A. All right. Once we are in an area and we find
the formation that looks like it will yield a suit-
able amount of water, we'll put in what we call a
test well. It's a well casing and a well screen.
We'll develop it and then we will put a pump in it
and test it.

Q. M-m h-m-m.

A. Now, depending on location and so on, let's say,
not in this particular project here, that if the --
our customer decides that he wants the installation
of a permanent well, we usually remove that test
well and then proceed and install a permanent well.

Q. Well, I'm speaking of this specific customer's
request now. What do you propose to do with this
test well, I mean now that you've made this drilling?

A. Well, our client --

Q. What do you --

A. Our client owns it. He has not gone beyond the test drilling and the test pumping we've done. We have no further contract with him to do anything. I don't know what they're going to do with it.

Q. I'm not knowledgeable at all in this field.

A. Right.

Q. What do you learn through this test, what information are you seeking?

A. Well --

Q. No, I know what you're seeking; what information do you learn --

A. We learn --

Q. -- upon making this test well, what --

A. We learn --

MR. DICKERSON: Let him try and answer.

THE WITNESS: We learn what the capacity or the potential capacity of the formation is and by taking samples, we also can determine what the chemical quality of the water is.

Q. What is your potential capacity at this?

A. At Warren Street?

Q. Yes.

A. I -- I haven't calculated that, Mrs. Daly, yet. That information was turned over to the engineer and what he's done with it, I don't know.

Q. Which engineer is that?

A. I think Mr. McPhee has that information.

Q. Oh, then he can answer my other questions?

A. I don't know if he has gone into it to develop any information.

Q. Because I am concerned that this will be used. I was told at the Heritage Hills office that this would be used for specific purposes and I'm concerned about the fact that if -- now, if they do decide to use that well, they will have to dig down deeper, is that true?

A. No, if they wanted to use that specific well, it could be used in its present state.

Q. But -- well, do you think it's feasible to use it in its present state?

A. It pumps water.

Q. But you have no idea of the rate?

A. Well, I know we ran a test on it and it pumped a certain capacity.

Q. But you don't have the figures?

A. Yes, I have the figures.

Q. What are they?

A. We pumped 178 gallons a minute out of the well.

Q. Is that sufficient for the purposes that I was told it would be used for?

MR. DICKERSON: Well --

A. I don't know what purposes they were.

MR. DICKERSON: Well, first you got to watch that question a little bit.

MRS. DALY: Oh, all right. Well, as I say, I'm totally unfamiliar.

MR. DICKERSON: Yes, right, I'll try and guide you. You want to know what that well is good for, and obviously it's good for some water. Now, unless you want to be a little more specific as to what purposes you were told that it would be used for --

MRS. DALY: Yes, yes, if I may.

MR. DICKERSON: Which we can measure this against what the estimated water demand will be or something like that. Now, what specifically--

MRS. DALY: Well, I was told that it

would be used for the sales or administration offices purposes and I believe the -- the model area.

MR. DICKERSON: Otherwise --

MRS. DALY: I'm not sure.

MR. DICKERSON: Otherwise a demonstration type situation rather than a sales --

MRS. DALY: Well, the sales office would be occupied all day long.

MR. DICKERSON: No, but I mean it's not a living quarters.

MRS. DALY: No, and I don't know what the living accommodations would be so I don't know what would be required.

MR. DICKERSON: Can you tell us?

MR. McGANN: There is no gravel packed well there. We have two rock wells, small rock wells, up near the office area and we have no intention of using the well. We have two small rock wells near the sales office.

MR. DICKERSON: Mr. McGann has said they have no intention of using the well you're referring to, that they have two small rock wells

near the sales office.

MRS. DALY: Oh, well, maybe that was the reason I was given the term "wells" instead of a well. They said they had several wells in that area.

MR. DICKERSON: Then it would be a different situation and isolated area entirely.

BY MRS. DALY:

Q. But what if they decided to increase the depth of that well, what effect would that have on my well which is so close?

A. Mrs. Daly, the bottom of the screen of this well is right on rock and if we went into rock as experienced with most rock wells, they're not very prolific as far as a yield goes. The -- it would not increase the capacity of the well to drill that well any deeper or not to any -- you know, any significant extent. The water is -- that comes from that well comes from the gravel in which the well screen is installed.

MR. FLORENCE: That was the 40-foot depth, right?

THE WITNESS: Yes, sir, we hit rock at 40 foot.

MR. FLORENCE: Did you go through any clay to get to that at that point?

THE WITNESS: Yeah, we went through--

MR. FLORENCE: A clay barrier?

THE WITNESS: Some 15 feet of clay.

MR. FLORENCE: All right.

MR. DICKERSON: Did you hear the answer?

MRS. DALY: Yes.

MR. DICKERSON: He said he went through 15 feet of clay.

BY MRS. DALY:

Q. Now, you said you struck rock at 40 feet, a depth of 40 feet, am I correct?

A. Yes, ma'am.

Q. Am I correct in assuming that wells, most other wells in this area do go through rock, in other words by going through rock?

A. I would say probably, and I haven't made a survey, but knowing the area, knowing something about the area, I'd say probably 99 percent of the wells in the area are rock wells.

Q. Well, then what's to stop you from going through

them to increase the well?

A. For the reason that the rock doesn't yield any significant amount of water, Mrs. Daly.

MR. DICKERSON: The normal house, single house, the Health Department would like to see a five-gallon a minute well. So would most homeowners. Most homeowners will be happy with a well on the order of one to two gallons a minute and rock wells may yield quantities on this order. Sometimes the rock well will be very fortunate and give you three or four gallons a minute, sometimes it will give you a larger quantity. Sometimes it will give you a half a gallon a minute and you've got a problem for a single house and for a development type situation, the requirements needed for the development are such that a one- or two- or three-gallon-a-minute well isn't worth the money you put into it. It isn't worth bothering with generally. I'm just giving you some background on this.

MRS. DALY: Well, inasmuch as --

MR. DICKERSON: In other words, you could have a low yield well which is generally what you would expect from a relatively shallow rock

well in this area. It's perfectly satisfactory for an individual house, but you wouldn't want to build an apartment complex with it.

MRS. DALY: Well, I have a pretty good gushing well, that I know.

MR. DICKERSON: Well --

MRS. DALY: Isn't there a danger that you may be tapping my source of supply, my underground stream? I put "my" in quotations, I mean since I used it before you did?

MR. DICKERSON: Well, we'll have to-- let's divide that into two questions for you. With respect to the well at Warren Street and with respect to the wells over on Route 100, is it?

MRS. DALY: I'm speaking -- no, I'm speaking of Warren Street.

MR. DICKERSON: The one at Warren Street.

MRS. DALY: The test well, the 40-foot test well.

MR. DICKERSON: O.K.

THE WITNESS: Well, since the well is not being pumped, that in itself would be an

indication that it couldn't affect you. It's not being pumped, it's not being used.

BY MRS. DALY:

Q. Well, right now it isn't.

A. No.

Q. But that's -- that's no answer.

MR. DICKERSON: Mrs. Daly wants to know if you, in your opinion, know could that well affect her supply?

A. It's very doubtful that that would have any-- that pumping that well would have any affect on your supply because your well, no doubt, is considerably deeper than that well.

Q. My well -- my pipe is in the ground about 10 feet.

A. That's all?

Q. Right, right. I had my pump removed for repair recently and the water was just gushing.

A. Well, if you had a gravel well in close proximity to that well and that well was being pumped it no doubt would have some effect on your well, yes, if you had a gravel well and you're in relatively close proximity to this well.

Q. I'm in very close proximity. Well, then if I

experience a water shortage, if I develop water problems, do I have recourse to --

MR. DICKERSON: Do you have -- could you recite the well log of this well, see what your records show?

MR. FLORENCE: You can have this one.

MR. DICKERSON: Clear this thing up fast.

THE WITNESS: Zero to three feet is fill, three to eight feet is bog, organic materials, 8 to 18 feet plastic grey clay and 18 to 40 feet fine to coarse sand, gravel and grits and 40 feet the cave rock.

MR. DICKERSON: And, Mrs. Daly, you just said that it wasn't under -- it wasn't under oath but we'll accept it for the moment, your well is approximately 10 feet deep or is it deeper?

MRS. DALY: That's all the pipe is in there, somewhere around 10 feet.

THE WITNESS: Mr. Dickerson, could I? Mrs. Daly, it's possible, and I don't know the elevation of where your location of your house is but in drilling rock wells, the well driller will

install a pipe location to rock and then continue drilling in the rock, what we call open hole, no casing, so you may only have 10 feet of pipe in your well but your well may be a hundred feet deep, if you follow me, because they drill open hole in the rock itself. Now, not knowing at exactly what the elevation is there at your place this might be the case. Judging by our log, we had no material down to 18 feet in this well, so you know, if your well is only 10 feet deep and you were in the same aquifer as this well we drilled here, it would indicate that your well would be in clay and if it was, you wouldn't be getting any water.

BY MRS. DALY:

Q. We don't have clay. We just have sand and gravel.

A. Impossible.

Q. Well --

MR. FLORENCE: Want to sell us your back yard?

MRS. DALY: Well, our predecessor was the builder of my home and he was the one that told us that my well is just merely 10 feet in the ground.

MR. DICKERSON: I think we'll have to

leave it about that. I think we've taken it as far as we have any information at this time.

MRS. DALY: All right, thank you.

MR. DICKERSON: I assume your other questions will be to Mr. McPhee, is that right?

MRS. DALY: Yes.

MR. DICKERSON: Does anyone else have any questions of this witness? Mr. Oehler?

MR. OEHLER: I was just going to ask, did he notice whether the pond, the number 2 well labeled on that map, did the pond go up or down during your pumping, during your 60 hours, or you didn't notice?

THE WITNESS: We noticed it didn't -- our pumping didn't have any effect on it.

MR. OEHLER: Even though the water from all the wells was eventually going into that?

THE WITNESS: Well, it flowed off.

MR. FLORENCE: Was that water -- I mean was that surface liquid or solid at the time that you noticed it wasn't moving up and down?

THE WITNESS: It was liquid.

MR. FLORENCE: Was it? Kind of late,

December, December 19th and 20th?

THE WITNESS: No, it was nice.

MR. DICKERSON: All right, Mr. Sullivan. I have a few questions.

THE WITNESS: Yes, sir.

MR. DICKERSON: We've pretty well killed the well, possible Well Site No. 2. Do you have any knowledge where -- I'm now going to concentrate on the area outlined in green on Exhibit 4 surrounding the test wells, 1, 2 and 3. Do you have any knowledge of the distance to any other wells in that area?

THE WITNESS: No, sir, I don't.

MR. DICKERSON: Do you have any knowledge of the -- of the existence of or the depth of any other wells in that area?

THE WITNESS: No, sir, I do not.

MR. DICKERSON: Did you have any observation wells in addition to the three test wells that were being pumped?

THE WITNESS: Yes, sir, I did.

MR. DICKERSON: Did you take measurements of those observation wells during the pump

test?

THE WITNESS: No, sir, I didn't.

MR. DICKERSON: With respect to the pump test and, first of all, the wells themselves, on the well log that was submitted in Exhibit No. 5, it says "Well No. 1, total depth 53 feet," is this correct, that the total depth of the well is 53 feet?

THE WITNESS: Yes, sir.

MR. DICKERSON: With respect to the labeling of the well log as far as the materials, were these materials identified by your well driller, well crew or a professional person in your employ?

THE WITNESS: They were identified by a driller.

MR. DICKERSON: These are driller's logs?

THE WITNESS: Yes, sir.

MR. DICKERSON: These notations?

THE WITNESS: Yes, sir.

MR. DICKERSON: With respect to Well No. 2 an indication of this well log -- an

observation of this well log indicates a depth of 41 feet, is that correct?

THE WITNESS: Yes, sir.

MR. DICKERSON: That is to the bottom of the screen?

THE WITNESS: Yes, sir.

MR. DICKERSON: And so with the log for Well No. 3 indicating a total depth of 64 feet?

THE WITNESS: Yes, sir.

MR. DICKERSON: What length screens did you use in the wells?

THE WITNESS: No. 1 had 10 feet of screen exposed. No. 2 was 10 foot and 3 was 15 feet.

MR. DICKERSON: No. 3 was 15 feet?

THE WITNESS: Yes, sir.

MR. DICKERSON: Thank you. To clear up a minor point, did all three of these wells penetrate bedrock?

THE WITNESS: Well, we drilled until we established the fact we were in bedrock with the cave rock, yes.

MR. DICKERSON: And then pulled back

and set the screens?

THE WITNESS: Yes.

MR. DICKERSON: So that these wells indicating depth in excess of the well depth indicated are based on the sampling and then you pulled back to set your screens?

THE WITNESS: Right.

MR. DICKERSON: O.K. With respect to the pump tests themselves, did you use the standard orifice method for calculating the flow?

THE WITNESS: Yes, sir.

MR. DICKERSON: This is using a fixed size orifice?

THE WITNESS: Yes, sir.

MR. DICKERSON: Do you remember the size of the orifice?

THE WITNESS: I don't offhand, no, sir.

MR. DICKERSON: But you used the appropriate tables?

THE WITNESS: Yes.

MR. DICKERSON: O.K. Now, also during this pump test, the level of the water in the pumped wells --

THE WITNESS: Was measured by electric telltale.

MR. DICKERSON: You used the electric system, all right. Now, were these measurements listed on the electrical reports, were these the only measurements taken and that generally they indicate measurements every minute for the first approximately 10, 15 minutes and then at greater periods of time between measurements?

THE WITNESS: Yes, sir.

MR. DICKERSON: At what depths were the pumps set?

THE WITNESS: Basically we set the pump hole right on top of the well screen, you know, as close to it as we could get.

MR. DICKERSON: At the top of the screen?

THE WITNESS: Yes, at the top of the screen.

MR. DICKERSON: I note here in at least one case you have an orifice size so they were indicated.

THE WITNESS: Yes. Now, the Well

No. 2 was pumped by suction.

MR. DICKERSON: Now, in all cases do you have -- or do you have any information as to the capacity of the pumps used during the test or were they all operated at their maximum capacity at the time?

THE WITNESS: I would -- No, I -- Well No. 1, the pump was not operated at its maximum capacity.

MR. DICKERSON: It was throttled down to a particular --

THE WITNESS: It was throttled down, yes, to prevent breaking suction.

MR. DICKERSON: O.K. And on Well No. 1, a covering -- a measure of the recovery of the water level was made 12 hours after the stopping of the pump test?

THE WITNESS: After, yes.

MR. DICKERSON: Well No. 2, you had a 60-second recovery measurement and a --

THE WITNESS: It would be approximately 12 hours.

MR. DICKERSON: 12 hours. On Well

No. 3, more extensive measurements as indicated on the driller's log?

THE WITNESS: Yes.

MR. DICKERSON: Were any of this data plotted for time drawdown curves?

THE WITNESS: No, sir.

MR. DICKERSON: Or time recovery curves?

THE WITNESS: We did not do it, no, sir.

MR. DICKERSON: You have no information then on the specific capacities or the other coefficients of measurements that were carried out on the well?

THE WITNESS: No.

MR. DICKERSON: Do you know whether or not this has been done?

THE WITNESS: No, I do not know whether it has been done. The information is, of course, available to do it.

MR. DICKERSON: All three wells were pumped at the same time?

THE WITNESS: Yes, sir.

MR. DICKERSON: Was there any indication as far as you were able to determine during the course of the pump test of any mutual interference or mutual effect of the wells?

THE WITNESS: Well, since they were all pumped at the same time --

MR. DICKERSON: I realize --

THE WITNESS: -- it was difficult --

MR. DICKERSON: I realize it's difficult to determine.

THE WITNESS: There was a declining drawdown to about -- the last four hours of the tests the well seemed to stabilize.

MR. DICKERSON: By "stabilize" you meant --

THE WITNESS: That the pump levels remained --

MR. DICKERSON: Constant?

THE WITNESS: Constant, right.

MR. DICKERSON: Were these wells ever pumped individually on individual pump tests?

THE WITNESS: Yes, they all were at one time or another.

MR. DICKERSON: Were these at some length or anything sufficient to give a --

THE WITNESS: No, I'd say -- I'd say probably somewhere in the neighborhood of eight hours.

MR. DICKERSON: In other words, not probably sufficient to determine the characteristics of each well?

THE WITNESS: I would say not.

MR. DICKERSON: During this -- these pump tests, were any observations made of the adjacent wells to indicate any degree of mutual interference?

THE WITNESS: I -- studying the record, I didn't see any.

MR. FLORENCE: I didn't hear Mr. Sullivan.

MR. DICKERSON: He said studying the record, he didn't see any --

MR. FLORENCE: -- indication of interference?

MR. DICKERSON: Interference.

And with respect to the 60-hour pump test was this

directed or were you directed to conduct a test until stabilization or just what?

THE WITNESS: We were directed to test and I don't remember whether it was established 60 hours but --

MR. DICKERSON: I know.

THE WITNESS: At the point we were told to --

MR. DICKERSON: I don't want to emphasize direction, but you did pump to stabilization in all cases?

THE WITNESS: Right, that we did.

MR. DICKERSON: You performed no soil borings or other exploratory work in the area of the dam site?

THE WITNESS: No, sir.

MR. DICKERSON: Or anything like that?

THE WITNESS: No, sir.

MR. DICKERSON: Thank you, Mr. Sullivan. You're excused.

(Whereupon, the witness was excused.)

MR. DICKERSON: Shall we take a brief break for about 10 minutes and bring Mr. McPhee back.

MR. DICKERSON: O. K. Ladies and gentlemen. O. K., ladies and gentlemen, Mr. McPhee has been recalled to the witness stand for the continuation of cross-examination.

WALTER MCPHEE

recalled as a witness for and in behalf of the Applicant, having been previously duly sworn, was examined further and testified as follows:

MR. DICKERSON: Mr. Vazzana, you had finished?

MR. VAZZANA: I had finished.

MR. DICKERSON: Mr. Oehler had finished. Mrs. Saia has left, and Dr. Port, I think, you are going to cover her interests, I believe. O. K. New York City, any questions of this witness?

MR. SPYROPOULOS: No questions.

MR. DICKERSON: Mr. or Mrs. Bahret?

(There was no response.)

Mr. Mally?

(No response.)

And now I call on Mr. Oehler, so it's Dr. Port's turn.

BY DR. PORT:

Q. Let's try and get to the point that I mentioned before to Mr. Sullivan, Mr. McPhee. I think you said this morning that you would not have information on the aquifer and that you couldn't tell its volume, its capacity?

A. No, I don't think I stated that.

Q. O. K. Well, tell me about it then.

A. I think I told Mr. Alexander that I would furnish him data on the volume of the aquifer and its potential storage capacity.

Q. But that you could not today?

A. Not today; I didn't have it with me.

Q. O. K. Now, as to its -- the problems of surrounding wells with respect to that particular aquifer, that data would be forthcoming also?

A. No, there's no way of setting such data forth on rock wells. I've gone on record that there would be some effect on possible gravel wells within a certain proximity of the well field but on rock wells, I went on record that I doubt unless we de-watered the sand and gravel to 100% there would be no effect on the rock wells.

Q. O. K. On the sand well, how much of a distance would

(Walter McPhee)

there have to be to have a negative effect on that well?

A. We haven't calculated the so-called drawdown curve which would show the limits of the drawdown for the water moved from the aquifer through the aquifer into the well screen or into the well. This can be calculated from data, from observation wells and the drawdown of the well itself, whether it's 300 feet, 400 feet, I don't know.

Q. O. K. All right. I'm not sure whether I'm causing a problem by doing this and if I am, there's a way around it so you can tell me.

MR. DICKERSON: Guide you through it as best we can.

DR. PORT: O. K. There is a letter in the files of the Town Clerk of the Town of Somers addressed to her from the Westchester County Department of Planning dated June 13th, 1972 and signed by Peter Eschweiler, Commissioner. On the bottom of the second page there is a hypothesis stated and that's my way around it. If it gets to be a problem, I will state the hypothesis rather than Mr. Eschweiler, so let's go ahead. Either way I think I come out. I state the hypothesis?

MR. DICKERSON: I think the proper way for you to do it would be for you to state the hypothesis.

Q. O. K. I will state the hypothesis. Then --

MR. DICKERSON: I take it there will be no objection if he reads the hypothesis in this case.

Q. It reads like this, or I'll say it like this: Consider a simple hypothetical example, a designed residential development project proposes to serve all its residents from a central water source drawing on well into aquifers in the area. By virtue of the scale of the project and strong central pumps, we will hypothesize that it is possible that the central pumping station can such in water from portions of the aquifer beyond the borders of the project; by thus lowering the water table it may mean that other existing wells in the town may run dry or provide insufficient flows.

Now, the word "town" is an interesting word because the word "town" can be immediately proximate to the area we're talking about or it can be broader than the immediate area. Somebody said

earlier and I wasn't here when you were introduced, that you had degrees from here to the end of their arm and that indicates in terms of your expertise. Would you guess that under the hypothesis I have just established for you that the aquifer that might be -- and again under that hypothesis -- affected, would have a certain radius to that aquifer, and I'll let you state the radius.

A. You were here this morning?

Q. I was.

A. Yes. I described this morning, and actually it is enclosed as an exhibit in evidence, a portion of the U. S. G. S. Quad showing the Town of Somers, a drainage basin tributary to the aquifer. That would be the limit of any possible -- I don't use the word "probably" but I use the word "possible effect" as far as any wells are concerned. Anything outside of that --

Q. This red here.

MR. DICKERSON: This, you're referring to the area --

THE WITNESS: Yes, the drainage.

MR. DICKERSON: Accurately depicted in

Exhibit 29.

THE WITNESS: Right.

MR. DICKERSON: Approximately so in green on 23.

THE WITNESS: That would be the limit as far as any effect, possible effect of withdrawing water from the aquifer at the -- on the bottom of that valley. In all practical --

Q. That's the --

A. In all practical effects, unless the shallow wells, dug wells on the sides of the hill, your effect on water supply in the rock wells would be very small. The only effect as far as wells would be wells within the aquifer itself or shallow wells on the overburden above the aquifer.

Q. O. K. I think this is helpful because as I read this particular map, it seems to me that the area extends along Route 100 from Ivandale Cemetery north into Butlerville and east beyond Dean's Bridge Road into Lake Purdy and west up to approximately the area where the golf course is.

A. The proposed golf course.

Q. Right, O. K.

A. That is the drainage area.

Q. Now, that's an extensive area and because of its inclusion of Dean's Bridge and Lake Purdy which are both very well settled, highly settled areas, it is of course of concern to -- to citizens of the town and an area where -- where we need expertise and help as we're allowed.

A. But I think, as Mr. Sullivan estimated before that in this area 99% of the water supply will be from deep rock wells. As I stated in prior testimony, the deep rock wells in this drainage basin will not be affected by water being extracted from the aquifer, that we planned to withdraw water from.

Q. Well, you did use a figure that perked up our ears, I speak for my wife and myself. You used something like 150 feet. It so happens my well is a rock well 100 feet, O. K.? Automatically, red signals! Tilt! O. K.? Right? O. K. Now, yet to come right to my case and to our own particular interests, I would like you to look at this again to make sure that I'm reading you correctly. I think I am. I think you're telling me that there is no way that this aquifer could affect my well which is on the corner

of Route 202 and Warren Street on the westerly side of the pond approximately 50 yards west. Would you look at that and tell me if I'm right.

A. Yes, I know where your home is and your home is outside of the drainage basin. Therefore, unless some very unique conditions exist, withdrawing water from this aquifer will not affect your well or any wells outside of this drainage basin.

Q Now, I think I'm correct in saying that actually that kind of question is really within your domain and the central office domain as contrasted to the regional office's and so really this is a subject which you are going to have to decide by virtue of the evidence that's been brought forth.

MR. DICKERSON: I will make a comment on my personal practice. I like to think it's because I'm reasonably efficient but I have made notes during the course of these proceedings as to certain items that appear of interest and then I wait until all cross-examination is over. Usually my list has been whittled down somewhat so I don't have to ask quite as many questions and in this proceeding, the burden of proof rests with the applicant. There

are certain things that need amplification for the record so the record can be as reasonably complete as possible and if these matters are not covered during cross-examination or direct examination, I will endeavor to ask the questions as I see are necessary to complete the record. But --

Q. I gathered that's what you were doing with Mr. Sullivan.

MR. DICKERSON: Right, and if these things are not carried forward or not presented or not available then the finding must be accordingly. There are several things that, as of this moment I have some questions on. However, I will maintain my usual practice of letting somebody else do my work for me at least until cross-examination is over.

DR. PORT: I look at the size of the stenographic record; I don't think anybody else is doing your job for you. When you get down to making the study, I think you've got a job.

MR. DICKERSON: That's what I'm supposed to do.

MR. PORT: Right.

MR. DICKERSON: Off the record.

(Discussion off the record.)

BY DR. PORT:

Q. I got a feeling from the same question that I asked Mr. Sullivan and I'm about to ask you, that you're the better man of the two to answer this particular question and so I'm going to try to go at it a little differently. At any point in time in your professional practice have you ever been faced with a situation where people's wells have gone out allegedly because of construction and a particular well being dug and so forth; have you ever been involved with that?

A. No.

Q. You have not. You did say this morning, I believe, that it is difficult to establish that a well has gone out because of construction of a well, is that correct?

A. I think I - when I made that statement, I also made the statement that the hydrology of ground water rock wells is not a science, that it is a matter of chance. As you know, we start drilling the rock well and we keep drilling until we get another -- the water you hope to get out of the

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well. It may go on for many hundred feet before you open enough fissures in the rock to feed that well and you may be lucky as was indicated, I believe by the Hearing Officer that you might get two gallons a minute, you might get 10 gallons a minute. I've seen some rock wells as high as ten gallons a minute but not too frequently.

Q. In other words, we're not too far from the divining rod.

A. The divining rod I don't think would help you on the rock well.

Q. Touche. Well, really, Mr. McGann made a statement that if they were responsible for this occurrence, this type of occurrence, they would certainly take care of the situation and, you know, I'm trying to figure out how the devil do I prove to him that he did or did not cause the thing to occur and I keep getting an answer for understandable reasons, granted, but I still keep getting an answer and my neighbors keep getting an answer which says, well, you know, really, that's pretty hard to do, you got yourself a pretty good job on your hands trying to do that. Would that probably -- that frame of mind, frame of refer-

ence be somewhat accurate in your mind?

A. That's a difficult one to answer. Certainly you could prove it if the conditions were such that there was material proof and I think I stated that earlier. Say a whole group of rock wells failed in the proximity of where you were or are withdrawing water and that the gravel packed wells had drawn the water down to a point that they were practically running dry, then you have your proof, no question. They are the culprit. They have dewatered the source of the recharge of the water into the rock wells. Rock wells only get their water from the surface. If you take all the water out of the overburden, there's no water going to enter the crevices and you will mine water out of the rock well. Now, you can mine water out of a rock well for a long period of time depending upon the volume of the crevices, interstices, what have you, or if you have fractured rock on the top which may be ideal. If you happen to be in limestone, you may mine it for a thousand years and never worry about it.

Q. We are somewhat sensitive to this particular problem because we, within the last four months, have

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had a problem with our well because of construction next door to us, O. K.? So we have also been through the problem we've just been talking about for the last ten minutes of establishing why somebody else is responsible for what happened to your well.

A. A charge of dynamite in proximity of a rock well may be disastrous to the well.

Q. It's disastrous to a house anyhow.

A. As to a rock well. Proximity in this case, I don't mean right next door, within a few hundred feet.

Q. All right. Now, the -- I'm interested, I'm working, if you're wondering, from the public notice, have been since I started, and I'm just going right straight down through the various areas. Now, I'm interested in your choice of, was it 44,000 gallons?

A. 44,000 gallons per day.

Q. Yes, for the area which is, I guess we'll call it commercial and industrial. Can you tell me how you came to that? I'm intrigued at how that number came to pass.

A. This was based on the Southbury experience as far as their commercial development and estimating a certain number of square feet of classification of commercial development, so much in community development based on that, then this figure was arrived at.

Q. All right, so that it does make the assumption, however, that the enterprises in the area so designated would be quite similar to that in Southbury?

A. That's the only assumption that could be made at this time.

Q. O. K. So that if it were, for example, to go to the opposite extremes a convention center, it would be totally inadequate?

A. (Witness nods head.)

Q. O. K.

MR. FLORENCE: You have to say it.

MR. DICKERSON: The witness indicated the answer affirmatively.

DOCTOR PORT: O. K.

THE WITNESS: You want me to speak up?

MR. FLORENCE: No, I was just going to suggest that I didn't hear anything and I looked up

and you were nodding and I wanted to get it for the record.

THE WITNESS: She can see me.

MR. BLASI: I might say you do have to answer.

THE WITNESS: Yes, there is a convention center in the Southbury complex.

Q. Is it in that same area that we will call 44,000?

A. There is an inn which has convention facilities plus the bazaar which is --

Q. I've been to the inn, so I know of its existence.

MR. BLASI: Heritage Inn.

A. Heritage Inn, and then a bazaar adjacent to it and that is the principal commercial development. The other developments consist of community functions which are outside of the consumption in the building.

Q. And that's the point of the 44,000?

A. This made up of swimming pools and that sort of thing.

Q. O. K. The dam: Can you talk to me about the dam at all?

A. No.

Q. No, you can't?

A. Not my discipline.

Q. O. K. Can you talk to me about the sewage effluent discharge and site?

A. Now you're referring again to the public notice?

Q. Yes, I am.

A. The public notice in this case refers to an outfall structure, a sewage outfall structure. This again is being covered by Leonard Bibbo. It consists of the construction south of 202 on the existing culvert. That's only my knowledge.

Q. Is that correct, the pumphouse itself is at 202?

A. No, the outfall.

Q. The outfall, O. K.

A. No, the outfall structure.

Q. O. K.

A. I believe that is what it referred to in the notice.

MR. DICKERSON: The outfall structure, the dam and the stream diversion are governed by the Stream Protection Law as opposed to the Water Supply Act and there's a separation here.

Q. Yes, I understand.

A. What four -- what four applications are there?

Q. Yes, do I recall you saying, to pursue this just a little bit -- I don't want to try and put you in a position where you're answering, being made to answer or trying to be made to be answerable about something that you had nothing to do with, but I have a recollection of you saying something to the effect that although you were not the original engineer that when you came onto the job that you agreed with the site onto which would be placed the pump or --

A. There's no -- there is no sewage pumping station on the project.

Q. All right.

A. As far as this application is concerned. I think you were referring to the waste treatment facilities.

Q. Yeah, right. O. K. Is -- did I hear correctly?

A. Yes, I reviewed all of the data available and concurred with the site that had been picked.

Q. All right, that's an important statement because I'm hearing you say now that you concur with it which means that there was an original decision prior to

your coming on to put it on that site?

A. That site had been selected at the time the Master Plan had been approved by the Zoning Board of Appeals, is it?

Q. Yes, that would be correct, because I intended to bring up something if you hadn't said that. We had a letter that we sent in November of 1972 which I guess is prior to your coming --

A. Approximately one year.

Q. -- coming onto the job?

A. No, no, '72, I came in December of '72.

Q. That's correct, about a month ahead, in which we protested that particular aspect of it, and so I felt sure that you were not the original engineer who made that decision.

A. No, I was a subcontractor to the original engineer, so I was familiar with quite a bit of the operation during that period of November and December.

Q. M-m h-m-m, all right. You are not prepared to discuss the -- what do they call it here, the relocation of the stream; is that correct?

A. The only point I could discuss was the necessity

for it in the sense that the location of the treatment plant required it, that's all.

Q. That's an interesting point. In layman's language, you know there's lots of engineers around here and they understand what you're saying but in layman's language, why was it necessary to use that particular site?

A. The site was selected and approved by the town in the granting the permit. The site as related to the other site to be studied, that would be on the -- on the creek to the east, Plum Brook, Plum Brook. We eliminated Plum Brook because of two things: A smaller drainage area and poorer quality of waters in the brook during the time of the survey. We eliminated the "Y" brook or Question Mark Brook because of an extremely small drainage area; therefore, we came up with the only other site available was the site which had been approved by the town. Now, that site was limited in the sense that it was limited by Warren Street and the main road going up through the development and by a property line on the north, an existing property line and the boundary of 202 on the south, so you're confined

within an area of -- I don't know what the scale of that map is but I would guess maybe a thousand feet north and south and six hundred ~~feet~~ wide. Now, under the State's rules, one of the requirements is that you have to keep the elements of a sewage treatment plant so many feet from the nearest well, existing well, have to set up a series of lines that we could not build beyond on the north and on the west. In the town's approval also, they requested that a buffer zone to keep construction away from the main access road and I believe it was approximately 100 feet and now we were bounded on the east. The only way we could move was north or south and no matter where we moved north or south we would have to relocate the brook in that site.

Q. M-m h-m-m, and the reason for not going -- see, this question has been asked a hundred times, oh maybe more than that, by people in the town and I'm just giving you the opportunity to lay it out on the record as to why. The people are asking the question: If Heritage Hills has got 900 and, I think it says 18 acres here --

MR. BLASI: Approximately.

Q. (Continuing) Approximately 918 acres. -- why could it not have been, for example, placed in the middle of their site as contrasted to on the edge of their site and, therefore, have been away from existing dwellings of their neighbors?

A. Well, are you finished with it?

Q. Sure.

A. Yes. All of the sewers, the majority of them cover -- serving the majority of the inhabited area of Heritage Hills are gravity sewers flowing down, following the course of Brown Brook. Therefore, the only point you could put a treatment plant without putting a pumping station and then pumping back up the hill is at the lower point of the drainage course. If a pumping station had been built in the same position as the treatment plant, less area would be required but having worked on other projects in Westchester County that discharge their effluent into the City of New York's water supply system, a requirement of the City of New York is that not only can or should -- do you have to build a pumping station but you have to build sufficient emergency treatment facilities to take care of the

possible malfunctioning of the pumping station because that gravity flow is going to continue by forces of gravity to flow downhill. If the pumps broke down or a line in the pumping station ruptured, something of this nature, it would flood the pumping station. It would eventually come out the door of the pumping station and follow the course of the creek down to the reservoir so you would still end up with a treatment facility at that site. Now, here you would have an emergency treatment facility that might be in the eyes of the City of New York adequate to take the shock load off the reservoir but really not adequate to give you the degree of treatment that the proposed facilities would give you. Therefore, it is better to have that gravity flow go through a seven-unit operation at the treatment facility where you have backup seven deep of different degrees of treatment than have it go through an emergency treatment and then, when that isn't working, be pumped back up the hill and have the same thing happen and the same sewage treated, renovated effluent come down the hill. If I haven't confused you, that's the logic.

Q. Well, I get the news that it's New York City's fault.

A. No, not New York City's fault. I think it's a case -- it's a case that I'm sure that Mr. Kipp over here, if the pumping station would be built on the site and no emergency treatment to be provided and during acts of God as we would call the malfunctions and the breakdown, or electric power failure or whatever you want to call it, and this raw sewage was to flow down through the Fire Pond and onto Kipp's property, Mr. Kipp would not appreciate it either, so he would probably make it a condition if New York City didn't make it a condition.

MR. FLORENCE: We'll speak for ourselves in that respect.

THE WITNESS: I'm anticipating.

Q. There are -- I know of a well which has been running now for, actually three wells which have been running for, let's see, 35 years. At no point during those 35 years had both wells been out at the same time. This past summer -- and they're about, incidentally, 100 yards away from the boundaries of Heritage Hills, the both wells went out. Now, I make the analogy,

what happens when the emergency portion of the treatment plant is also out at the same time as the basic unit?

A. I went through this again in testimony today. The treatment plant is designed in three equal modules. If you lose one module, you'll have 66 and two thirds percent of the total capacity of the plant as designed still available. All mechanical equipment is backed up by equivalency of a distance by mechanical device. For electric power failure, you have a diesel generator set up which will serve all of this. Also the process is such, the process is quite flexible that if you were to go out for a period of time, you might measure a decrease in efficiency initially but ultimately the process could be brought back to a point that the efficiency would approach the original efficiency using two thirds of the plant. I went through this this morning.

Q. Yes, I recall that; you reminded me of that. All right.

A. So you have pretty good -- I won't use the word "failsafe," but it approaches a failsafe type of

operation.

Q. Let's take the possibility of the worst thing happening, whatever that is, O. K.? Is there a possibility that the sewage would back up into Brown Brook and then come sliding down Brown Brook later on?

A. That possibility always exists.

Q. That does exist?

A. Earthquakes, rupturing of sewer lines.

Q. I'm not trying to be smart about it.

A. No.

Q. That's not my point.

A. No, I realize, I'm saying -- and I'm using the word "possibility," because you would have to rupture your collection system to the point that it would have to be plugged completely, whatever is uphill is going to continue to flow downhill until it fills the system and when it can be no longer contained within the system will come out the man-hole covers, flow across the ground to the nearest water. This happens in many cases where disasters take place.

Q. O. K. I think that these are all the kinds of ques-

tions.

A. Thank you.

DR. PORT: I think these are all the questions, Mr. Dickerson, I can ask of Mr. McPhee.

MR. DICKERSON: All right, thank you.

DR. PORT: He would like me to yield to him.

MR. BLASI: He's been on before.

MR. FLORENCE: I just have a series of questions.

MR. BLASI: He finished his cross-examination before. How much longer do we have to keep going?

MR. DICKERSON: I still have to run through the rest of the people to see if they have any further questions. Then I'm sure you're going to have a little direct, redirect.

Can your questions be saved to recross or --

MR. FLORENCE: I don't want to be limited on recross to that which was redirect.

MR. DICKERSON: No, I'm just asking if they can wait to that.

MR. FLORENCE: Certainly.

MR. DICKERSON: Mr. Oehler, Mrs. Daly,
do you have any questions of Mr. McPhee?

MRS. DALY: Yes, I do. Yes, I do.

BY MRS. DALY:

Q. Well, number one, I still didn't have one question
answered and then I -- to my satisfaction regarding
the exact location of this test well.

A. Which test well is this?

Q. At the corner, somewhere on the property bordering
Warren and 202. I'd like an exact location on that
map on the withdrawal there.

A. Well, I have a map and I don't think it's in this
file, which was the map that was used by the driller
to do all of his tests, pumping tests, not his pump-
ing tests but his exploration in that area. We've
gone through it, John; will you spot it for me
please? John is more familiar with it than I am.

MR. DICKERSON: Could we take this red
marker pen over with you?

THE WITNESS: O. K.

MR. DICKERSON: We'll go off the record
for a second and try and zero in on it, then mark it.

(Discussion off the record.)

MR. DICKERSON: We'll go back on the record. Would you indicate with some suitable letters, how about "WS?"

THE WITNESS: Is a black pen all right?

MR. DICKERSON: Well, you can use the red pen. We have a red dot in the vicinity of Warren Street and Route 202; use the letters "WT" indicating the Warren Street test well for want of a better name.

(Witness marks exhibit.)

Does that give you an approximate location of the well that -- that you're concerned with?

MRS. DALY: Yes.

Q. Is it visible presently or has it been covered over; how does it stand?

A. That I don't know. I haven't looked at it in some time. John, is it still visible?

MR. DeGRACE: Perhaps that much (indicating).

THE WITNESS: The top of the casing still above the ground.

MR. DeGRACE: Yes, it was the last time I saw it.

THE WITNESS: Capped, the well is capped.

Q. Trying to look over my notes. Regarding Brown Brook, the brook in some instances is located fairly close to the "A" road of Heritage Hills and Heritage Hills, from the road -- the road on up is at a very decided slope, very steep slope. Presently, after any rain or snows, there's been no problem with any flooding or anything of that nature. However, with the position of the road and the elevation of the road, the very steep terrace to the side of the road bordering, facing our property lines, I seem to visualize a possible cascade of water coming down from the hill and across the road. A. This is an area as far as the drainage is concerned that will be covered by Leonard Bibbo in his presentation.

Q. Oh, you don't handle that?

A. He will be following.

Q. All right. While I'm at it, would you kindly define the term "recharging?"

A. Recharging. Well, you're withdrawing during periods of zero precipitation, water that has been flowing through the ground or stored in the ground and as you withdraw this, you can withdraw over a complete cycle, a certain amount of water without theoretically depleting that water. Therefore, during periods where you are withdrawing water with no recharge of water entering into the aquifer you're withdrawing from -- let me start all over again; I see I'm getting confused. This is the best thing I could describe to you would be the New York City reservoir system, Croton system, Croton system has an annual safe yield -- correct me, John, if I'm using the wrong numbers because I know you changed your numbers after the drought of many years ago, it used to be I think 320 million gallons per day was the safe yield of the Croton system, maybe it was 380, 320, it's approximately. You will notice that during periods on the reservoir system the reservoir drops. Your -- you are taking water out of the reservoir because the rainfall is not sufficient to meet the demand of the 320, but over -- and I don't know the cycle of design for Croton, but

I think it is a five-year cycle that it was designed on, every five years it will recover to a point where you start. In the wet years, every year it will not only recover but it will spill water over its spillway at the Hudson River. That water you're putting back into the reservoir is recharge. The same water that you're putting back into the soil and the sand and the gravel to make the surface of the ground. I think that's easier to understand than what I started to say before.

Q. Thank you. Are you qualified to answer a question regarding the brook in the golf course area?

A. No.

Q. The wetlands at Warren and 202?

A. No.

Q. How about the dam?

A. No.

Q. Who is?

A. Mr. Bibbo.

MRS. DALY: Well, I guess that's all I have then.

THE WITNESS: Thank you.

MR. DICKERSON: Are there any other

parties who have any questions of this witness?

MR. FLORENCE: I have.

MR. DICKERSON: Do you want to start redirect now or do you want to have a few questions now?

MR. FLORENCE: I don't have a few questions; I have many questions. I would recommend at this time, Mr. Dickerson, that we adjourn for the day, this being a natural break, unless there is some very specific reason why we may not. I would also say to you that, pursuant to our request at the end of our meeting last night, that I am not able to attend tomorrow nor the next day because I've been ordered by three different Supreme Court Justices to be in three different places on two different days.

MR. BLASI: First of all, Mr. Hearing Officer, I'm willing to stay here and so is everybody else that I know of to have Mr. Florence finish his -- whatever questions you are going to permit him to finish as his cross-examination. I have very few questions on redirect. As a matter of fact, they amount to three, just to correct some errors

that were made this morning or yesterday and as far as three Supreme Court judges, I'm impressed, but I think that this matter was noticed. We have a whole group of people here, not only from the county, from the state, our own experts, our own people who have been here today and day in and day out, plus the fact that this is prejudicial to our client's position with all the work that's been done and what has to be resolved by the Department of Environmental Conservation. I think it's incumbent on Mr. Florence -- and if he wishes my aid, I will talk to these Supreme Court Justices -- I think you have just as much standing under the Environmental Conservation Law as any Supreme Court judge. If these hearings are scheduled, they should be -- they should be followed and they should be pursued and finished and he has partners. There's no reason for that.

MR. DICKERSON: I appreciate both your concerns, your sentiments and your statements. I don't think I got as much swack to put it bluntly as a Supreme Court judge.

MR. BLASI: Well, I --

MR. DICKERSON: I, unfortunately, have had this problem before and lost.

MR. BLASI: We also have a problem. Mr. Bibbo is going to be a professional witness next week. He's been called as a witness to a court proceeding and --

MR. DICKERSON: Before -- before we discuss this request for adjournment, you have quite a bit more cross-examination or --

MR. FLORENCE: It really covers several of the disciplines, and it starts right from the beginning of his retainer in relation to the master plan and --

MR. DICKERSON: We have several questions that are open at this moment that will have to be covered involving the - from the Department's standpoint and responsibilities the question of yield of the aquifer, the evaluation of the aquifer. I understand there is some additional material to be forthcoming on the aereal extent which has been proposed to be submitted. I'm quite willing to press on. However, I can not foresee that the difference of a half an hour or an hour or even an hour

and a half is going to make too much difference in view of some very serious concerns on analysis and evaluation of the aquifer.

I do not feel that I can deny a request for adjournment. Do you want to press on for another hour or so, more than happy to, but I don't know if it's going to serve too much purpose. We could comment on that.

MR. BLASI: Well, I'm willing to press on as long as you're willing to sit, Mr. Dickerson, even to 12 o'clock tonight if necessary.

MR. DICKERSON: No, sir.

MR. BLASI: May I just -- I must -- I just make the remark.

MR. DICKERSON: Yes, I recognize that.

MR. BLASI: I mean I know we're not going to do it.

MR. FLORENCE: In the name of mother-hood.

MR. DICKERSON: We all know where we stand.

MR. FLORENCE: I've got to try a case tonight down in Bedford.

MR. DICKERSON: O. K. Let's go off the record for a minute.

(Discussion off the record.)

MR. DICKERSON: I want to make a couple of comments. Let me make these comments on the record. We're going to go off the record very shortly to determine the earliest possible time at which we -- the earliest possible time at which time we can continue this hearing with two issues paramount, equity to the applicant to arrive at a speedy determination of this case and equity to the parties who have filed in opposition to this case, so that they may have a reasonable chance to present their arguments, conduct cross-examination and develop their cases. And with that we'll go off the record to determine our next meeting date.

(Discussion off the record.)

Ladies and gentlemen, before I rule on the adjournment, I'd like to make an announcement. We have the copies of the minutes of the first two days of the hearing; we have the copies for the third day will be available probably late Friday but no later than next Monday. I'm going to make

available one copy of the Department's copies, one set here in the Town Clerk's Office. Mrs. Gavigan will retain custody of them. They will be open for your inspection to make notes or any reference you wish to make to them. I will have a second complete set in the Department's Office in Albany along with all exhibits that have been formally received into evidence thus far or marked for identification. The only constraint upon the leaving this copy of the minutes in the town office is that it shall not be xeroxed or in other ways reproduced. The minutes are the property of Mrs. Williman. This is her livelihood. She does have a copyright entitlement to them. If you wish complete sets or copies of the minutes, they may be purchased from her. I recognize the inconvenience of getting to the Regional Office at New Paltz and/or Albany for some parties. This is why I'm doing this, but I want it clearly understood, and I trust there will be no future difficulty on the question of reproduction. The first two days I'm giving to Mrs. Gavigan now. The other copy, as I said, will be made available to her and she will retain them

in her office until we get back as soon as possible.

Secondly, on the matter of the adjournment, I seriously and very sincerely feel for the needs of the applicant at this time and on the question of expediting this case. However, I also recognize the rights of the various objectors, the particular problems of the Regional Attorney and with some regret, I will make the following ruling: We will stand adjourned until ten a. m. on the morning of October 2nd at which point we will reconvene in these chambers and continue without further delay to the completion of this hearing.

The hearing stands adjourned until ten a. m. on October 2nd.

MR. FLORENCE: Mr. Dickerson, what would be the -- in the handling of the exhibits as they are presently in evidence, would they be kept here with Mrs. Gavigan?

MR. DICKERSON: No, the exhibits that have been formally marked and received as exhibits will be retained in my custody in Albany. I'm sorry I don't have extra copies available. I am required to retain custody of them. They will be available

for inspection. The papers that were prefiled before the hearing, copies I believe were available at the Regional Office in New Paltz, is that correct?

MR. DANSKIN: Yes, it is.

MR. DICKERSON: That is correct.

As far as additional copies, each party would have to refer to the applicant through Mr. Blasi.

MR. BLASI: I didn't get that last.

MR. DICKERSON: I said if anybody wants additional copies --

MR. BLASI: Copies of what?

MR. DICKERSON: Copies of the exhibits or any requests or anything of this nature for convenience and to save a trip from Albany, I'll have to refer you to Mr. Blasi.

MR. BLASI: If I have any, I'll make them available. These minutes were ordered per diem, if you recall, Mr. Examiner, at our request and at our expense and we are here carrying on this hearing all at our expense and all we're getting is purposeful delays here, repetition and more repetition and this is not addressed to you, sir.

MR. DICKERSON: I wish you would address yourself to the record.

MR. BLASI: It is on the record, and I think the Hearing Officer has been most kind and most understanding but this applicant is being pushed into a very unfortunate delaying position. This matter has been fully advertised; everything has come in and it is a severe hardship and extremely prejudicial and that is the reason that I pressed my application to have this hearing adjourned only until Tuesday, September 25th. We've had officials standing around here while questions have been repeated, the same answers have been given and we have made it clear that we don't want to forestall or keep anybody, particularly the local people, from answering but what has been happening, there's been an abuse of this record in my opinion and I must state it.

MR. DICKERSON: O. K., thank you, Mr. Blasi. I recognize your concern. It is my ruling and my opinion that we would best be served for all parties to reconvene as indicated at ten a. m. on October 2nd with the specific intention of taking

no further adjournments except for rest and sustenance until this hearing is completed.

The hearing stands adjourned.

(Whereupon at 5:44 P. M. the hearing was adjourned to reconvene on October 2nd, 1973 at 10 a. m.)

Witnesses:	<u>Direct</u>	<u>Cross</u>	<u>Redirect</u>	<u>Recross</u>
Walter McPhee		392		
Thomas Sullivan	502	514		
Walter McPhee (Rec.)		582		

E X H I B I T SFor Id. Evid.

Ex. No. 24 - Copy of DEC form DWR-35(9/70) Application No. 360-24-0051 (SP-85)	407	409
Ex. No. 25 - Map or plan entitled "Stream Relocation, Heritage Hills of Westchester, dated 7/2/73"	407	409
Ex. No. 26 - Map or plan designated "Condo- minium No. 1, Route 202 and Warren Street Outfall Sewer dated 7/11/73"	407	409
Ex. No. 27 - Copy of DEC form DWR-36(5/70) Application for Permit for Con- struction, etc., dated 7/12/73	407	409
Ex. No. 28-A-Sheet entitled "Access Drive from Warren Street and Proposed Pond"	407	409
Ex. No. 28-B-Sheet entitled "Condo. No. 1, Dam at Warren Street Access Drive dated July 31."	407	409
Ex. No. 29 - Copy of portion of U.S.G.S. Quad- rangle sheet, Croton Falls.	442	443